The SOUTHERN ECONOMIC JOURNAL

Volume XXI | April 1955 | Number 4

ARTICLES

A JOINT PUBLICATION OF THE SOUTHERN ECONOMIC ASSOCIATION
AND THE UNIVERSITY OF NORTH CAROLINA

Volume XXI, Number 4 APRIL 1955

The SOUTHERN ECONOMIC JOURNAL

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Published Quarterly at Chapel Hill, N. C.

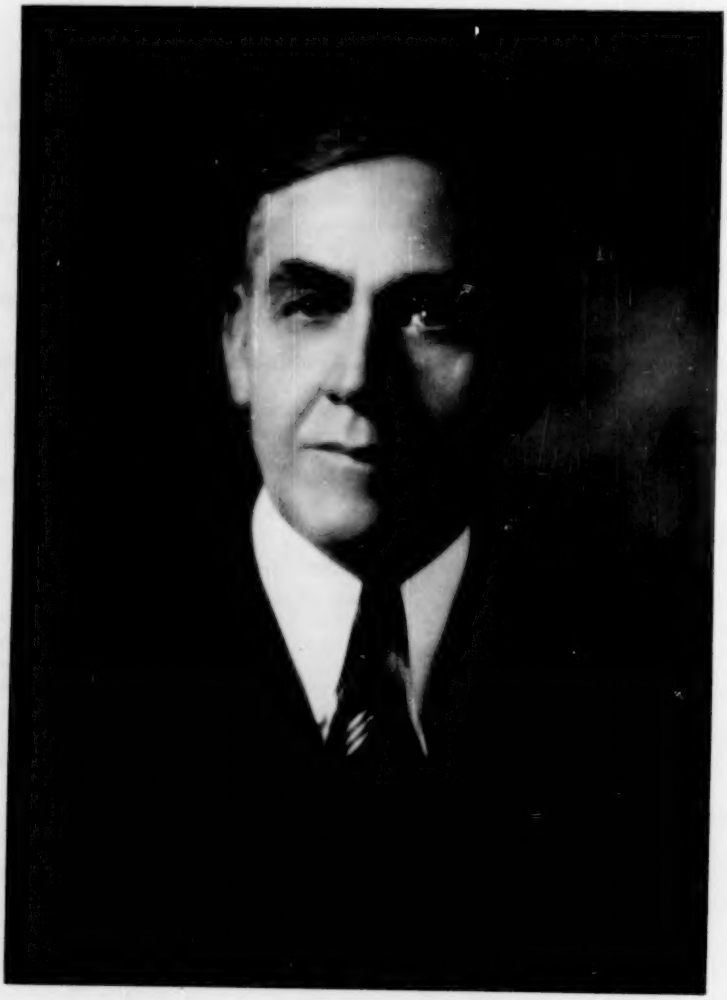
The Southern Economic Journal is published four times a year, in January, April, July, and October, at Chapel Hill, N. C. The subscription price is $5.00 per year, $1.50 for single copies.

Microfilm editions of this *Journal* are available to regular subscribers only and may be obtained at the completion of the volume by writing to University Microfilms, 313 North First Street, Ann Arbor, Michigan.

All communications should be addressed to the Managing Editor, P. O. Box 1289, Chapel Hill, N. C.

The articles in this *Journal* are indexed in *The International Index to Periodicals*.

Entered as second-class matter on May 11, 1936, at the Post Office at Chapel Hill, North Carolina, under the act of March 3, 1879, section 510, P. L. & R.



Robert H. Tucker

VOLUME XXI NUMBER 4

The SOUTHERN ECONOMIC JOURNAL

April 1955

ARISTOTLE ON ECONOMIC IMPUTATION AND RELATED MATTERS

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"His writings are very numerous and, considering the man's all-around excellence, I deemed it incumbent on me to catalogue them." Diogenes Laertius, in his "Aristotle."

In an interesting review of the development of the theory of marginal utility up to the late eighteenth century, Emil Kauder[1] calls attention once again to Oskar Kraus's thesis that Aristotle anticipated not only the role of diminishing utility in price formation but also the Austrian theory of imputation.[2] It is our intention, in this note, to question whether Aristotle can properly be said to have anticipated the modern theory of imputation.[3] In carrying out this intention we shall review Aristotle's theories, as set forth in *Topica* and the *Rhetoric*, in so far as they pertain, or may pertain, to economic matters, and we shall touch upon the applications, if any, made of these theories in the *Politics* and the *Ethica Nicomachea*, to which works students usually turn for Aristotle's economic ideas. We shall also consider his remarks concerning utility.

I

The statements of Aristotle, on which Kraus based his thesis, and which will be cited later, appear in *Topica*, Book III, one of Aristotle's earliest works.[4]

[1] "Genesis of the Marginal Utility Theory," *Economic Journal*, LXIII, 1953, pp. 638-50. For accounts of its subsequent development see George Stigler, "The Development of Utility Theory," *Journal of Political Economy*, LVIII, 1950, pp. 307-27, 373-96, and Jacob Viner, "The Utility Theory and Its Critics," *ibid.*, XXXIII, 1925, pp. 369-87.

[2] "Die Aristotelische Werttheorie in ihren Beziehungen zu den Lehren der modernen Psychologenschule," *Zeitschrift für die gesamte Staatswissenschaft*, LXI, 1905, pp. 573-92; *Die Werttheorien*, Brünn, 1937, chaps. 3, 40.

[3] Whether, as Kauder and Kraus suggest was possible, Menger or Böhm-Bawerk was influenced by Aristotle's discussion, is not our concern. In his *Grundsätze der Volkswirtschaftslehre*, 1st ed., Vienna, 1873 (translated by J. Dingwall and B. F. Hoselitz under the title, *Principles of Economics* [Glencoe, 1950]), Carl Menger refers to Aristotle's *De Anima*, *Ethica Nicomachea*, and *Politics*, but not to *Topica* wherein Aristotle's imputation theory, if it be such, is to be found, or to the *Rhetoric* wherein some arguments from *Topica* are repeated.

[4] See W. Jaeger, *Aristotle*, 2d ed., Oxford, 1950, p. 84. According to W. D. Ross, *Aristotle*, 5th ed., London, 1953, p. 18 n., Book III, probably was one of the earlier ones composed. See also Max Hamburger, *Morals and Law*, New Haven, 1951, on the development of Aristotle's legal and ethical theory.

Many of the items concerning logic which appear in this work had been developed in the Academy prior to their adoption by Aristotle.[5] The final versions of the works in which most of Aristotle's economic ideas appear, the *Ethica Nicomachea*, the *Politics*, and the *Rhetoric*, were completed later.[6]

The purpose of *Topica* is to "find a line of inquiry whereby we shall be able to reason from opinions that are generally accepted about every problem propounded to us, and also shall ourselves, when standing up to an argument, avoid saying anything that will obstruct us." The subject, in short, is the dialectical syllogism which has for its premises, not scientific truths, but the beliefs of either the majority or the wise, and which Aristotle employed in the study of ethical and related problems.[7] Book III of *Topica* deals with (among other things) "the question which is the more desirable, or the better, of two or more things" that are "nearly related and about which we commonly discuss for which of the two we ought rather to vote, because we do not see any advantage on either side as compared with the other." [8] In the *Rhetoric*, which is concerned with rhetoric as a branch of dialectic and with ways of persuading people about any given subject, the materials derived from Book III of *Topica* appear in Book I, chapter 7, which is concerned with the "comparison of 'good' things." [9]

Inasmuch as Aristotle's treatment of comparison in *Topica* and the *Rhetoric* only occasionally has to do with economic goods as such, it is well to keep in mind his distinction between the activities of production and those of living,[10]

[5] Jaeger, *op. cit.*, pp. 46–47 n., 330 n., 369–70; Ross, *op. cit.*, p. 56; also J. L. Stocks, "The Composition of Aristotle's Logical Works," *Classical Quarterly*, XXVII, 1933, pp. 15–24.

[6] See Jaeger, *op. cit.*, chaps. 9–10; Ross, *op. cit.*, pp. 17–19. I have used Ernest Barker's translation (together with introduction, notes, etc.) of Aristotle's *Politics*, Oxford, 1946, and W. D. Ross's translation of the *Nicomachean Ethics*.

[7] See *Topica*, 100^a; Ross, *op. cit.*, pp. 56 ff; John Burnet, *The Ethics of Aristotle*, London, 1900, pp. xxxix ff. We use W. A. Pickard-Cambridge's translation of *Topica*, included in Vol. I of *The Works of Aristotle*, edited by W. D. Ross, Oxford, 1928. The Greeks believed it impossible to achieve "mathematical accuracy in the discussion of human affairs," Burnet observed (*op. cit.*, xliii); see Aristotle, *Nic. Eth.*, I. 3, but also cp. *Metaphysics*, 1078^a ff.

[8] *Topica*, 116^a.

[9] W. Rhys Roberts's translation of *Rhetorica* is used, together with the commentary of E. M. Pope in J. E. Sandys, ed., *The Rhetoric of Aristotle*, I, Cambridge, 1877, pp. 118 ff.

[10] According to Aristotle, from an instrument of *production* (e.g., a shuttle) "there issues something which is different, and exists apart, from the immediate act of its use"; but from instruments of *action* (e.g., slave or other chattels, articles of household property such as beds, or garments) "there only comes the one fact of their use." See *Pol.*, I. iv. 4–5, VII. iv. 2–3; also *Nic. Eth.*, 1140^b, 6, where it is said that while making or production "has an end other than itself, action cannot; for good action itself is its end." In Barker's words (*Politics*, pp. 10–11, nn.) "production aims at a result beyond the immediate doing, which remains when the doing is over, but 'action,' such as the rendering of a service, is complete in itself, and aims at no result beyond the immediate doing." Aristotle's distinction is not quite the same as that of Adam Smith between productive and unproductive labor; for some (presumably) of the activities of living within the household upon which slaves and other instruments were engaged could add value at least temporarily to the materials upon which they worked unless household activities were made co-terminous with services. Cp. Smith, *The Weath of Nations*, II, 3. In the *Metaphysics* (e.g., see VII. viii, x–xi) production is described as consisting in the introduction of forms into particular matter (e.g., the form of a sphere into bronze).

together with his classification of goods. He divided goods into three classes, all of which "should belong to the happy man: . . . external goods, goods of the body, and goods of the soul"; and he assigned the members of the two last classes to the category of internal goods, thus contrasting them with external goods.[11] Within the class of external goods he included instruments[12] employed by man, money, and other forms of wealth, together with such things as good birth, friends, and honor. Among the goods of the body he included such bodily excellences as health, strength, beauty, etc., all of which are productive of other goods. Among the goods of the soul (which are "most properly and truly goods") he included justice, temperance, wisdom, courage or fortitude, magnanimity, magnificence, liberality, gentleness, prudence, and other virtues or "excellences of the soul." Well-being, which men chose for its own sake and because it made life worth while, consisted in activity in accordance with virtue (whence good activities flowed), or, if there were several virtues, in accordance with the best and most perfect virtue. The virtues, of course, were good in themselves, the moral virtues usually representing means between excesses and deficiencies of feeling or action.[13] The virtues are analogues of the value-attitudes, or final

[11] See *Pol.*, 1323^b; *Nic. Eth.*, 1098^b. Plato had divided goods similarly, into those of the soul, those of the body, and money and property. See *Laws*, 697. He ranked those of the soul highest; money and property, lowest. *Ibid.*, 743. Aristotle supposes that men aim at happiness, or, as Ross prefers, "well-being." In the *Rhetoric* he includes among the "constituent parts" of happiness or well-being; "good birth, plenty of friends, good friends, wealth, good children, plenty of children, a happy old age, also such bodily excellences as health, beauty, strength, large stature, athletic powers, together with fame, honour, good luck, and virtue" (1360^b). Subsequently (*ibid.*, 1362^b) he lists "things that must be good": "Happiness, as being desirable in itself and sufficient by itself, and as being that for whose sake we choose many other things. Also justice, courage, temperance, magnanimity, magnificence, and all such qualities, as being excellences of the soul. Further, health, beauty, and the like, as being bodily excellences and productive of many other good things. . . . Wealth, . . . friends and friendship, . . . honour and reputation, . . . the faculty of speech and action, . . . good parts, strong memory, receptiveness, quickness and intuition, and the like, . . . all the sciences and arts, . . . life, . . . justice." Within the category of wealth he included land, slaves cattle money and movables. See *Pol.* II. vii. 21; also Rhetoric, 1361^a.

[12] Instruments were animate (e.g., slaves, subordinate employees) or inanimate. Whether they were "productive" turned on whether they were used to make objects or were engaged upon activities of living within the household. Whence it followed that, even though the need for slaves and subordinates should disappear from the area of production if each inanimate instrument could do its own work, there would still be need for slaves or subordinates within the realm of the household. See *Pol.*, I. iv. 3–6, and Barker's notes; also note 10 above.

[13] See *Nic. Eth.*, 1098^b and *passim*; Ross, *op. cit.*, pp. 190–92, 195–97, 203, 215, 232. A virtue falling within the moral class was "a disposition to choose, consisting essentially in a mean relatively to use determined by a rule, i.e., by the rule by which a practically wise man would determine it." It was thus an intellectual virtue, "practical wisdom," which enabled man to apply the "right rule" in each department of life and choose the right means; just as it was a moral virtue that produced compliance with this rule and the choice of the right end to aim at. It was also an intellectual virtue, 'theoretical wisdom' (which was superior to practical wisdom), with whose activity was associated well-being in the highest sense, that is, the contemplative life which emphasized contemplation of truth. Well-being of this sort being possible for man only to a small extent, men generally sought well-being through activity in accordance with the moral virtues. See *ibid.*, pp. 194, 215, 220–21, 232–34; Burnet,

values, which constitute the terminus of the means-ends chain in sociological systems such as those of Parsons and his disciples.

In the section that follows we shall summarize what Aristotle has to say in *Topica* and the *Rhetoric* concerning the comparability of things described as good. Since the goods to which he refers often are not ostensibly economic goods, we are confronted with the problem of determining whether or not what he says has implications for economic analysis. This problem we meet by presenting, when necessary, both an interpretation somewhat applicable in economic analysis and one restricted to what appears to be the philosophical context in which Aristotle's statement is found.

II

Aristotle occasionally mentions qualities of goods such as their durability, security, capacity to serve men in all seasons instead of only during one, their being "unmixed with pain," their being held in esteem by the wise, etc., which condition their relative "goodness," "utility," and desirability.[14] And he notes that "what is natural is better than what is acquired, since it is harder to come by."[15] His meaning often is obscured by the fact that he fails to specify whether

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op. cit., pp. 247–49, 437–39. For detailed references to *Nic. Eth.*, upon which this note and much of the above paragraph is based, see Ross, *op. cit*; see also *Pol.*, III. iv, VII. xiii, 11–13.

[14] *Topica*, 116^a, 117^a; *Rhetoric*, 1364^b. It will be recalled that Bentham (*Introduction to the Principles of Morals and Legislation* [1780], Oxford, 1947, chap. 4) included among the circumstances affecting the value of a pleasure (pain), its duration, its certainty or uncertainty, and its purity, or freedom from the likelihood of being followed by pain (pleasure).

[15] *Rhetoric*, 1365^a, also *Topica*, 116^b. Aristotle, as Ross states (*op. cit.*, p. 68; cp. Burnet, *op. cit.*, pp. xlvi-xlviii, and Jaeger, *op. cit.*, 74, 76, 75 n.), identified the nature of things with "the character which they have when fully developed." Nature "makes each separate thing for a separate end; and she does so because each instrument has the finest finish when it serves a single purpose and not a variety of purposes." "All things derive their essential character from their function and their capacity." "Nothing contrary to nature is right." See *Pol.*, I. ii. 3, 13, also 8–12; VII. iii. 6, also ii. 15. Each form has achieved its completion or end of existence when it has become full-grown (e.g., a plant when it flowers). Each instrument, or art, has been used properly when it has been made to perform its own proper function or serve its intended end. Improper or unnatural use of something is made when it is employed to serve an unintended end. Accordingly, reasoning from the fact that money had been invented or designed to facilitate exchange or barter, Aristotle described lending money out at interest as making an unnatural use of money, since such use entailed employing money in a manner that did not realize its intended end. Again, reasoning from the premise that the purpose of the art of acquisition is to supply the requisites of the household, he described the acquisition of edibles from nature, together with their barter, as natural, since it was essential to life, and trade (along with employment in the mechanical arts or as hired labor) as unnatural, since it was unessential to life and involved the acquisition of gain from men instead of from nature. Reasoning similarly, he described the acquisition of inedibles (e.g., wood, minerals) from nature, together with their barter, as intermediately natural and legitimate, since it was important for life but not so essential as the acquisition of edibles from nature, along with their barter. See *Pol.*, 1256^a–1258^b; also *Nic. Eth.*, V. v, where money is treated as a conventional means of representing demand which serves as medium of exchange, unit of account, and store of value. See also J. C. Wilson, "Aristotle's Classification of the Arts of Acquisition," *Classical Review*, X, 1896, pp. 186–88.

his remarks relate to sets of goods, or to individual members of such sets, and whether his argument is intended to be generalized from members to sets, or from sets to members.[16]

(1) His observation, that "the end is generally supposed to be more desirable than the means, and of two means, that which lies nearer to the end," [17] might be interpreted to imply that, for reasons which are not specified (e.g., an assumed greater delay in the use of the means), a lower-order good is more desirable than a higher-order good. Such an interpretation is not indicated, however, since what is meant is merely that something which is final and self-sufficient is superior to another thing which is desired for the sake of this something; and since what Aristotle apparently had in mind was a general means-end chain running from instrumental goods to goods of the soul.[18]

(2) Aristotle could be interpreted as implying that the value of a given good is reflected back into the agent which produces it, with the result that the value of a more productive agent exceeds that of a less productive agent. For he remarks, apropos of "two things . . . very much like another," that "the one which is followed by the greater good is the more desirable: or, if the consequences be evil, that is the more desirable which is followed by the less evil." [19] He even appears to suggest that the value of one productive agent exceeds that of another in the same measure as the value of the former agent's end exceeds that of the latter.[20] He makes no effort, however, to translate his remarks into terms of economic value, and gives no hint that they are to be so interpreted.

[16] In the *Rhetoric*, 1363^b^, he implies that the distribution of traits within classes is the same when he says that "the superiority of class over class is proportionate to the superiority possessed by their largest specimens" and illustrates his principle by saying that if the tallest man is taller than the tallest woman, men generally are taller than women. In *Topica*, 117^b^, 33 ff, he reasons similarly, but here the classes he compares, horses and men, are more dissimilar.

[17] *Topica*, 116^b^. In the *Rhetoric*, 1364^a^, he said: "Again, a thing which is desirable in itself is a greater good than a thing which is not desirable in itself . . . Again, if one of two things is an end, and the other is not, the former is the greater good, as being chosen for its own sake and not for the sake of something else." Cp. Menger, *op. cit.*, pp. 56 ff.

[18] In *Eryxias*, apparently written by a member of the Academy in the first third of the third century B. C., it is suggested that of every art it is true, "that not only the materials but the instruments by which we procure them and without which the work could not go on, are useful for that art" and hence constitute wealth (*ibid.*, 401, 403). This theory respecting derived value is not, however, endorsed by the author. He holds rather to the view that, since wealth comprises only that which is indispensable for the satisfaction of bodily needs, things (such as money) which contribute only indirectly to man's needs are not wealth (*ibid.*, 402–404). See translation by B. Jowett in his *The Dialogues of Plato*; also D. E. Eichholz, "The Pseudo-Platonic Dialogue *ERYXIAS*", *Classical Quarterly*, XXIX, 1935, pp. 129–49.

[19] *Topica*, 117^a^. Earlier (*ibid.*, 116^b^) he says: "Moreover, of two productive agents that one is more desirable whose end is better." In the *Rhetoric*, 1363^b^, he states that "a thing productive of a greater good than another is productive of is itself a greater good than that other"; and he turns this proposition around to read "that which is produced by a greater good is itself a greater good."

[20] Let P_1 and P_2 be the "productive agents" which bring about ends E_1 and E_2. Then,

(3) He makes several statements which are susceptible of translation into terms of an indifference map. Thus, writing of things which "are very much like one another," he states that "a greater number of good things is more desirable than a smaller, either absolutely or when one is included in the other, viz. the smaller number in the greater";[21] and that "it is quite possible for what is not good, together with what is, to be more desirable than a greater number of good things." The meaning of the former statement is self-evident. The latter could be construed to mean that a collection of positive and negative (i.e., costs) goods may exceed in net value, some other collection of positive goods, but such construction is hardly warranted by his remarks.[22]

(4) Aristotle was unable to reconcile his observations concerning exchange value with those pertaining to what later came to be called "value in use."[23] He wrote thus in *Topica:*

> Another rule is that the more conspicuous good is more desirable than the less conspicuous, and the more difficult than the easier: for we appreciate better the possession of things that cannot be easily acquired.[24]

In the *Rhetoric* he elaborates this statement:

> Further, what is rare is a greater good than what is plentiful. Thus gold is a better thing than iron, though less useful: it is harder to get, and therefore better worth getting. Reversely, it may be argued that the plentiful is a better thing than the rare, because we can make more use of it. For what is often useful surpasses what is seldom useful, whence the saying, 'The best of things is water.' More generally: the hard thing is better than the

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according to Aristotle, $(E_1 - E_2) > (E_2 - P_2)$, and $(P_1 - P_2) = (E_1 - E_2)$, with the result that $(P_1 > E_2)$. For he says: "Supposing the excess of happiness over health to be greater than that of health over what produces health, then what produces happiness is better than health. For what produces happiness exceeds what produces health just as much as happiness exceeds health." See *Tapico* 116^b. Health is a bodily good; happiness, a good in itself.

[21] *Topica*, 117^a. In the *Rhetoric*, 1363^b, he says: "a greater number of goods is a greater good than one or a smaller number, if that one or that smaller number is included in the count; for then the larger number surpasses the smaller, and the smaller quantity is surpassed as being contained in the larger." Later he writes: "if one of two normal things is better or nobler than the other, an unusual degree of that thing is better or nobler than an unusual degree of the other" (*ibid.*, 1364^b). In the latter instance, his criterion of comparison is comparable quality; in the former, mere quantity, or an approximation thereto.

[22] *Topica*, 117^a. Aristotle makes no attempt to apply this statement to economic goods. He notes later that a thing is more valuable when accompanied by pleasure, or by freedom from pain or evil, than when this is not the case. *Ibid.*, 117^a, 24, 117^b, 31 ff. Cp. note 14 above.

[23] In *Pol.*, 1257^a, wherein, as in his ethical writings, Aristotle discussed exchange, he distinguished between use of a shoe for wear and use of it for exchange and added that whereas the former use was proper and peculiar to a shoe, the latter use was not. Accordingly, since the need to exchange shoes arose from "some men having more, and others less, than suffices for their needs," exchange of shoes might properly be practiced only to the extent that it sufficed for the needs of those with too many and those with too few shoes. See note 15 above.

[24] 117^b; also 118^b, 21 ff., on a thing desired for the look of it; and 119^a, where he says: "For if what is more precious be more desirable, then also what is precious is desirable; and if what is more useful be more desirable, then also what is useful is desirable."

easy, because it is rarer: and reversely, the easy thing is better than the hard, for it is as we wish it to be.[25]

Aristotle's comment on the conspicuousness of a good, in the first of these quotations, makes the value of a good in some instances dependent on the owner's being accredited by the public with possessing the good, or on his being able to display the good conspicuously.[26] Aristotle recognizes the operation of the principle of scarcity, and suggests that, on the supply side, the scarcity of a good may have its origin in the fact that its cost of acquisition or extraction is high.

In the two quotations given in the text of the preceding paragraph, and particularly in the one from the *Rhetoric*, Aristotle is concerned with what Böhm-Bawerk called "the old paradox" of value, a paradox that arose out of the fact that the marginal utility and the price of members of sets of supposedly dispensable though relatively scarce goods (e.g., pearls) greatly exceeded the marginal utility and the price of members of sets of supposedly indispensable though relatively plentiful goods (e.g., corn).[27] So Aristotle implied that the value and hence the price of members of sets of scarce but dispensable goods are high even though the aggregate usefulness of any such genus (corresponding roughly to the area lying under the demand curve in a Marshallian industry-model) is very much less than that of any one of many genera of goods which, though seemingly indispensable,[28] are plentiful and hence command only relatively low unit-prices. But, despite his comments upon utility[29] and his partial

[25] 1364ª. Elsewhere he says (*ibid.*, 1365ª): "And since a thing is better when it is harder or rarer than other things, its superiority may be due to seasons, ages, places, times, or one's natural powers."

[26] In the *Rhetoric*, 1365ᵇ, he states: "Those things which we are seen to possess are better than those which we are not seen to possess, since the former have the air of reality. Hence wealth may be regarded as a greater good if its existence is known to others."

[27] See *The Positive Theory of Capital* (1888) translated by W. A. Smart, New York, 1923, pp. 138 ff., 152–53.

[28] In one place he indicates that what has been judged a good thing "by the majority of men . . . must be so." See *Rhetoric*, 1364ᵇ, also 1363ª. This criterion, one of a number, is not specifically applied to economic goods: it is a belief, along with that in appraisals of the wise, which holds good in some part and hence is accepted as a premise. See Burnet, *op. cit.*, pp. xli, xliii. In *Topica*, 118ª (cp. *Pol.*, I. ix. 17), he indicates that while "perhaps necessities are more desirable," "superfluities are better than necessities." Here the "expression 'superfluity' applies whenever a man possesses the necessities of life and sets to work to secure as well other noble acquisitions" and thereby achieve "the good life" which is "better than mere life" which "itself is a necessity." Aristotle did not, therefore, have in mind the acquisition of many material goods beyond what he called "necessities." "Felicity . . . belongs more to those who have . . . kept acquisition of external goods within moderate limits" (*Pol.*, 1323ᵇ). See note 30 below.

[29] "Deliberation seeks to determine not ends but means to ends, i.e., what is most useful to do. Further, utility is a good thing. We ought therefore to assure ourselves of the main facts about Goodness and Utility in general." See *Rhetoric*, 1362ª; also 1363ª ff., on why men attach utility to particular things. Practical wisdom "makes us choose the right means," as Ross notes (*op. cit.*, pp. 200, 220–221). Practical utility in the realm of politics is treated at length in *Politics*, Books IV-VI. Utility is described as a property of both external and bodily goods (see note 11 above) and of "acts which are merely necessary, or

recognition of the principle of diminishing utility,[39] he did not hit upon a utilizable conception of marginal utility, in part perhaps because he lacked tools

merely and simply useful, as means to acts which are good in themselves." See *Pol.*, 1323ᵇ, 1333ᵃ. Goodness is described as the characteristic of activities of the soul which are in accordance with virtue (*Nic. Eth.*, 1098ᵃ), or of "what is desirable for its own sake" and is "that at which all things aim." See *Rhetoric*, 1336ᵇ; also Ross, *op. cit.*, pp. 190 ff. On "final cause," "Goodness," and ordering things see *Met.*, 994ᵃ, 8 ff., 994ᵇ, 8 ff., 1075ᵃ.

[39] Aristotle's argument suggests that the utility of both external goods and bodily goods is subject to diminution at the margin, but it does not make explicit the reason for the tendency of marginal utility to decline; that the utility of goods of the soul is not subject to decline at the margin; and that the pursuit of external goods, if continued after a moderate amount has been acquired, interferes with the accumulation of goods of the soul. "Felicity—no matter whether men find it in pleasure, or goodness, or both of the two—belongs more to those who have cultivated their character and mind to the uttermost, and kept the acquisition of external goods within moderate limits, than it does to those who have acquired more external goods than they possibly can use, and are lacking in the goods of the soul." This statement, based upon experience, is supported by theory. "External goods, like all other instruments, have a necessary limit of size. Indeed all things of utility [including the goods of the body as well as external goods] are of this character; and any excessive amount of such things must either cause its possessor some injury, or, at any rate, bring him no benefit. [It is the opposite with the goods of the soul.] The greater the amount of each of the goods of the soul, the greater is its utility—if indeed it is proper to predicate 'utility' at all here, and we ought not simply to predicate 'value.' " See *Pol.*, 1323ᵇ. When elsewhere (*Pol.*, 1326ᵃ, 1326ᵇ; *Nic. Eth.*, 1170ᵇ ff.) Aristotle asserted that "any object will lose its power of performing its function if it is either excessively small or of an excessive size," since it will "forfeit its nature" or "merely be defective," he was thinking in terms of right size rather than in terms of diminishing marginal utility or diminishing marginal productivity. So also when he said that "[true wealth has a limit of size, determined by the purpose of the association it serves]; . . . All the instruments needed by all the arts are limited, both in number and size, by the requirements of the art they serve" (*Pol.*, 1256ᵇ). At no time does Aristotle suggest, or recommend, that the consumer maximize the utility derivable from his purchasing power or resources through use of the marginal principle, nor does he make use of a marginal principle when discussing the use of instruments of production and the rules to be followed in management and acquisition (*ibid.*, I. x-xi). He stresses moderation even when discussing correctives for wrongdoing supposedly caused by a lack of material goods. For he says that a modicum of property and some work will prevent wrongdoing of the sort occasioned by a shortage of absolute necessaries; and that a temperate disposition, or the cultivation of philosophy, will prevent wrongdoing of the sort occasioned by a desire for superfluities (*ibid.*, II. vii. 11-13). Elsewhere (*ibid.*, II. vi. 9) he says that the amount of property owned should be "sufficient for a life of temperance and liberality" which lies intermediate between a life of luxury and one of penury. In general, Aristotle's conception of how much wealth should be acquired proceeds from his view of wealth as a means to a moral end which determines how much is required (cp. Barker's introduction to *Politics*, p. lvi), and not from a late nineteenth-century conception of utility.

Aristotle traced the origin of unnatural acquisition, with its emphasis upon profit and unlimited accumulation of currency, to the replacement of the idea that wealth consisted in the instruments actually needed in a household or state by the idea that wealth consisted primarily in "a fund of currency" and to "anxiety about livelihood, rather than about well-being." Natural acquisition, which was not distinct from household management, aimed only at the provision of enough instruments and materials to satisfy the requisites of the household. (See *Pol.*, I. viii. 14-15, ix, esp. 1, 10, 13-16).

and did not make sufficient use even of the tools at his disposal;[31] and so the paradox of value went unresolved.

(5) Aristotle pointed out that the value of something could be determined by discovering what its addition to (or subtraction from) a complex of things did to the value of this complex. (a) He pointed this out in general terms, suggesting that the comparative desirability of two things might be ascertained by contrasting the effects occasioned by their loss or by their addition. But in this general statement he did not specify the nature of the complex to which (from which) the thing was added (subtracted), or indicate whether this thing was in any way complementary to the complex, or state how the desirability or value of the thing added (subtracted) varied with the magnitude of the amount of the thing added (subtracted).

> Moreover, judge by the destruction and losses and generations and contraries of things: for things whose destruction is more objectionable are themselves more desirable. Likewise also with the losses and contraries of things; for a thing whose loss or contrary is more objectionable is itself more desirable. With the generations or acquisitions of things the opposite is the case: for things whose acquisition or generation is more desirable are themselves desirable.[32]

(b) He went on, however, to argue that if, after A and B had been added to (subtracted from) identical complexes C, $(A + C) > (B + C)$, or $(C - A) < (C - B)$, then $A > B$.

> Again, a thing is more desirable if, when added to a lesser good, it makes the whole a greater good. Likewise, also, you should judge by means of subtraction: for the thing upon whose subtraction the remainder is a lesser good may be taken to be a greater good, whichever it be whose subtraction makes the remainder a lesser good.[33]

Again Aristotle disregards the comparative complementarity (if any) of A and B with C, together with its effect upon the outcome; and so he fails to say whether A (or B) is superior to B (or A) because A (or B) is larger, or more complementary, or both. (c) Two pages later he presents a similar argument, which is open to the objections already made.

[31] Aristotle did not carry over into economic analysis his "method of exhaustion" or his notions of continuity. For an account of these see Sir Thomas Health, *A History of Greek Mathematics*, Oxford, 1921, I, pp. 336–48. His theory of causation (e.g., see Ross, *op. cit.*, pp. 51 ff., 71 ff., 155) did not lend itself nicely to economic analysis as does a modern functional approach.

[32] *Topica*, 117^a. In the *Rhetoric*, 1364^a, he says: "That is the greater good whose contrary is the greater evil, and whose loss affects us more." Kraus relies on the above quotation from *Topica*. Ross (*op. cit.*, pp. 101, 102) states that "generation" does not signify growth but, along with "destruction," makes up "the two sides of a single transformation of substance into substance." On the causes of "generation," see *ibid.*, pp. 105–07.

[33] *Topica*, 118^b. Kraus relies also on this quotation. In the *Rhetoric*, 1365^b, Aristotle says: "And of two good things that is better whose addition to a third thing makes a better whole than the addition of the other to the same thing will make."

Moreover, you should judge by means of addition and see if A when added to the same thing as B imparts to the whole such and such a character in a more marked degree than B, or if, when added to a thing which exhibits that character in a less degree, it imparts that character to the whole in a greater degree. Likewise, also, you may judge by means of subtraction: for if a thing upon whose subtraction the remainder exhibits such and such a character in a less degree, itself exhibits that character in a greater degree.[34]

Neither this statement, nor either of the two preceding statements, is given an economic interpretation, or made with economic goods in mind. At most, therefore, Aristotle could be said to have found in addition and subtraction processes whereby comparative values might be discovered under not very carefully specified conditions.

(6) Aristotle also suggested the use of a standard S wherewith two goods A and B might be directly compared, or to which (from which) they might be added (subtracted); and he stated that $A > B$, if $(S + A) > (S + B)$, or if $(S - A) < (S - B)$. But he did not make an economic application of this argument, or a statement respecting how much new information the described process provided.

Moreover, if one thing exceeds while the other falls short of the same standard of good, the one which exceeds is the more desirable; or if the one exceeds an even higher standard. Nay more, if there be two things both preferable to something, the one which is the more highly preferable to it is more desirable than the less highly preferable. Moreover, when the excess of a thing is more desirable than the excess of something else, that thing is itself also more desirable than the other, as (e.g.) friendship than money: for an excess of friendship is more desirable than an excess of money.[35]

(7) While Aristotle neglected, in the preceding arguments, to take into account the effects of complementarity, he did not always neglect these effects. For, having made a statement similar to that just presented in (6), he added that it was valid only on condition that S was not more complementary to A than to B. Yet, despite the fact that he made use of an economic example, he did not make an explicit economic application of the argument.

Moreover, judge by means of an addition, and see if the addition of A to the same thing as B makes the whole more desirable than does the addition of B. You must, however, beware of adducing a case in which the common term uses, or in some other way helps the case, of one of the things added to it, but not the other, as (e.g.) if you took a saw and a sickle in combination with the art of carpentry: for in the combination the saw is a more desirable thing, but it is not a more desirable thing without qualification.[36]

(8) Aristotle appeared to note, finally, that the more substitutable goods are, one for another, the more nearly they are equally desirable:[37] and that the greater

[34] *Topica*, 119ᵃ; my italics.

[35] *Topica*, 118ᵇ. In the *Rhetoric*, 1363ᵇ, Aristotle says: "Again, when two things each surpass a third, that which does so by a greater amount is the greater of the two; for it must surpass the greater as well as the less of the other two."

[36] *Topica*, 118ᵇ; my italics.

[37] "Another commonplace rule is that what is nearer to the good is better and more desirable, i.e., what more nearly resembles the good" (*Topica*, 117ᵇ).

the number of uses to which a thing may be put—that is, the greater the range of its substitutability for other things—the more desirable it is likely to be.

> Moreover, you should distinguish in how many senses "desirable" is used, and with a view to what ends, e.g., expediency or honor or pleasure. For what is useful for all or most of them may be taken to be more desirable than what is not useful in like manner.[38]

Again, no economic application is made of the argument, nor is it given an economic interpretation.

In summary, it may be said that while Aristotle noted the dependence of the value of means upon that of ends, and employed subtraction and addition when making comparisons, he contributed little to an understanding of the process of deriving the value of productive agents from that of their products and moving thence to the derivation of the prices of such agents. He occasionally recognized the role of complementarity and substitutability, but he did not apply this knowledge in his economic analyses.

III

In this section we shall inquire into whether the views set down in *Topica* and subsequently vulgarized in the *Rhetoric* (a work devoted not so much to analysis as to argumentation and persuasion, together with the use of comparison) were significantly reflected in the *Politica*, or in the *Ethica Nicomachea*, wherein Aristotle consciously and explicitly dealt with economic matters. He did not make use of these views in those parts of the *Rhetoric* in which he considered political or ethical questions; but this could have been due to the fact that he did not consider these questions in a manner that called for such use.

Much of what Aristotle has to say in his *Ethica Nicomachea* and in his *Politica* has to do with "particular" justice, a part of "justice" [39] which was one of the dozen or so moral virtues which man could express. Particular justice, it will be indicated, involved quantitative relationships, the correct determination of which called for the use of quantitative methods and the application of the imputation principle. Presumably, therefore, if Aristotle understood this principle and its uses, he might be expected to apply it in the course of his treatment of justice. We shall inquire, therefore, whether he did make use of the imputation principle in the *Ethica Nicomachea* wherein he dealt primarily with inter-individual relationships, or in the *Politica* wherein he treated of relationships obtaining among the members of associations (e.g., family, household, city-state or polis).

[38] *Topica*, 118^b. The inverse of this argument is also presented when he states that a self-sufficient good—i.e., one whose utilizability is not conditioned by the presence of complementary goods—is more desirable than a good that is not self-sufficient. "And of two things that which stands less in need of the other, or of other things, is the greater good, since it is more self-sufficing. (That which stands 'less' in need of others is that which needs either fewer or easier things.)" See *Rhetoric*, 1364^a, also *Topica*, 117^a, 37 ff. See also note 17 above and text; also note 15 above, where a single-purpose instrument is implied to be superior to a multi-purpose instrument.

[39] We shall ignore general or universal justice, the possessor of which exercised "complete virtue," i.e., virtue towards his neighbors as well as in his own affairs. See *Nic. Eth.*, V. i.

Particular justice, according to Aristotle, embraced three categories of justice: distributive justice; corrective or rectificatory justice; and justice in exchange (which may or may not correspond to distributive and/or rectificatory justice).[40] These three categories (which are distinguished below) resemble each other in making justice "a kind of mean," or an amount intermediate between injustice which consists in receiving too much or too little and injustice which consists in giving up too much or too little.[41]

Justice is that in virtue of which the just man is said to be a doer, by choice, of that which is just, and one who will distribute either between himself and another or between two others not so as to give more of what is desirable to himself and less to his neighbour (and conversely with what is harmful), but so as to give what is equal in accordance with proportion; and similarly in distributing between two other persons. Injustice on the other hand is similarly related to the unjust, which is excess and defect, contrary to proportion, of the useful or hurtful. For which reason injustice is excess and defect, viz. because it is productive of excess and defect—in one's own case excess of what is in its own nature useful and defect of what is hurtful, while in the case of others it is as a whole like what it is in one's own case, but proportion may be violated in either direction. In the unjust act to have too little is to be unjustly treated; to have too much is to act unjustly.[42]

Distributive justice "is that which is manifested in distributions of honour or money or the other things that fall to be divided among those who have a share in the constitution (for in these it is possible for one man to have a share either equal or unequal to that of another)." [43] This "species of the just" is "the proportional," and "the unjust is what violates the proportion." The just "involves at least four terms," the persons (call them A and B) "for whom it is in fact just," and the distributed objects (call them C and D) "in which it is manifested." Injustice obtains when distribution is not "according to merit," when equals are rewarded unequally, or when unequals are rewarded equally.[44]

[40] As Josef Soudek has shown (in his excellent paper, "Aristotle's Theory of Exchange: An Inquiry into the Origin of Economic Analysis," *Proceedings of the American Philosophical Society*, XCVI, 1952, pp. 45–75, esp. pp. 49–54), commentators on Aristotle usually have not recognized his distinguishing of justice in exchange from the other two categories, S. Pufendorf and D. G. Ritchie being among the very few who have noted this distinction. See *ibid.*, p. 53; also *Nic. Eth.*, V. v.

[41] *Nic. Eth.*, 1133ᵇ, 30 ff. Aristotle points out, however, that justice is not a kind of mean "in the same way as the other virtues" (*ibid.*). Most of the other moral virtues represent a mean between an excess and a defect of feeling or action. See Ross, *op. cit.*, pp. 203, 206, 213–14; John Burnet, *The Ethics of Aristotle*, London, 1900, pp. 69–72, 202–203. On voluntarily accepting less than one's due, see *Nic. Eth.*, V. ix–xi.

[42] *Nic. Eth.*, 1134ᵃ. See note 7 above on Aristotle's view that mathematical precision is not attainable in discussions of subjects such as justice.

[43] *Nic. Eth.*, 1130ᵇ. This form of justice therefore received far more attention in the *Politics* than did the others.

[44] *Nic. Eth.*, 1131ᵃ, also 1158ᵇ, 29 ff. Of course men disagree respecting criteria of merit, democrats identifying it "with the status of freemen, supporters of oligarchy with wealth (or with noble birth), and supporters of aristocracy with excellence." See *ibid.*, 1131ᵃ, 26 ff.; also *Pol.*, e.g., III. ix–xiii. According to Soudek (*op. cit.*, p. 52) distributive justice is more "natural" and less "conventional" than rectificatory justice.

The just is called "a species of the proportionate" because the required equality is achieved when, the persons and the objects being similarly related, the ratios are equal: i.e., A:B::C:D; and A:C::B:D. "The conjunction, then, of the term A with C and of B with D is what is just in distribution, and this species of the just is intermediate, and the unjust is what violates the proportion; for the proportionate is intermediate and the just is proportional." The justice "which distributes common possessions is always in accordance with" geometrical proportion.[45]

Rectificatory justice (which is that of the civil court, not that of the criminal court) "plays a rectifying part in transactions between man and man," be the transactions voluntary (e.g., "sale, purchase, loan for consumption, pledging, loan for use, depositing, letting") or involuntary (e.g., theft, adultery, assault, murder).[46] It is called rectificatory or corrective, since the law gives redress to an individual only when he has suffered a private wrong (tort, delict), or a hurt in the form of a violation of a legally valid contract.[47] It differs from distributive justice in that "the justice in transactions between man and man is a sort of equality indeed, and the injustice a sort of inequality; not according to that kind of proportion [the geometrical], however, but according to arithmetical proportion." [48] The wronged and the wrongdoer are equal in respect of the transactions to which they are parties, and "the law looks only to the distinctive character of the injury," the judge trying "to equalize things by means of the penalty, taking away from the gain of the assailant" and so eliminating the inequality wherein the injustice consists.[49] The judge to whom a dispute is taken is "a sort of animate justice," "an intermediate," and the equality which he reestablishes is "intermediate between the greater and the lesser . . . according

[45] *Nic. Eth.*, 1131^b. "In the case also in which the distribution is made from the common funds of a partnership it will be according to the same ratio which the funds put into the business by the partners bear to one another." See *ibid.*, 11.29 ff. In *Politics* (III. ix. 5) Aristotle said "that it is not just for a man who has contributed one pound to share equally in a sum of a hundred pounds (or, for that matter, in the interest accruing upon that sum) with the man who has contributed all the rest." He held that if A:C::B:D, then A + C: B + D::A:B, even though A and B are members of a different genus than C and D, in part because, Soudek suggests (*op. cit.*, p. 50), Aristotle supposed that a return belonged to the investor as an individual rather than to the investment made by him.

[46] *Nic. Eth.*, 1131^a. Voluntary transactions correspond to contracts in English and Roman law; involuntary transactions, to torts or delicts. See H. D. P. Lee, "The Legal Background of Two Passages in the *Nichomachean Ethics*", *Classical Quarterly*, XXXI, 1937, pp. 130-31.

[47] *Ibid.*

[48] *Nic. Eth.*, 1132^a. Arithmetical proportion obtains when $(a - b) = (b - c)$, and $a + c = 2b$; whereas geometric proportion obtains when $[(a - b)/(b - c)] = a/b$, and $ac = 2b^2$. These two, along with harmonic proportion, where the principal proportions employed in Aristotle's time. See Sir Thomas Heath, *op. cit.*, I, pp. 85-86.

[49] *Nic. Eth.*, 1132^a. The term "gain" here refers to the injury inflicted as well as to any gain per se; and "loss," to injury suffered as well as to any loss per se. So "the equal is intermediate between the greater and the less," and "corrective justice will be the intermediate between loss and gain." See *ibid*. The terms "loss" and "gain" had come from voluntary exchange, gain signifying one's excess over "one's own" resulting from exchange, and loss, the corresponding deficit suffered by the losing party. See *ibid.*, 1132^b.

to arithmetical proportion," and signifies restoration of "their own" to the parties involved.[50] The just thus "consists in having an equal amount before and after the transaction." [51]

Justice in exchange, or reciprocity, is the third form of particular justice. It does not necessarily imply distributive or rectificatory justice, or application of *lex talionis*. It is the "sort of justice"—later called commutative—that holds together members of associations which depend, as does the polis, upon continuation of that exchange of goods and services which develops when men specialize occupationally and then barter (exchange) their products for those of other specialists. The reciprocity required is that "in accordance with a proportion and not on the basis of precisely equal return. For it is by proportionate requittal that the city holds together."

> Proportionate return is secured by cross-conjunction. Let A be a builder, B a shoemaker, C a house, D a shoe. The builder, then, must get from the shoemaker the latter's work, and must himself give him a return of his own. If, then, first there is proportionate equality of goods, and then reciprocal action takes place, the result we mention will be effected. If not, the bargain is not equal, and does not hold; for there is nothing to prevent the work of the one being better than that of the others.[52] They must therefore be equated. (And this is true of the other arts also; . . .) . . . There will, then, be reciprocity when the terms have been equated so that as the farmer is to the shoemaker, the amount of the shoemaker's work is to that of the farmer's work for which it exchanges . . . when they still have their own goods. Thus they are equals and associates just because this equality can be effected in their case. Let A be a farmer, C food, B a shoemaker, D his product equated to C. If it had not been possible for reciprocity to be effected, there could have been no association of the parties."[53]

[50] *Nic. Eth.*, 1132^a. Suppose C is unjustly transferred from B to A. The intermediate value is $[(A + C) + (B - C)]\,\frac{1}{2}$, which is A when $A = B$. Then justice consists in restoring $(A + C)$ to A and $(B - C)$ to B by transferring C from $(A + C)$ to $(B - C)$. See *ibid.*, 1132^b.

[51] *Nic. Eth.*, 1132^b. "For to have more than one's own is called gaining, and to have less than one's original share is called losing, e.g., in buying and selling and in all other matters in which the law has left people free to make their own terms; but when they get neither more nor less but just what belongs to themselves, they say that they have their own and that they neither lose nor gain." See *ibid.*, 11. 12 ff.

[52] By "better" he means more skilled. He may be implying, though he does not say so, that the relative scarcity and hence the relative exchange value of a person's work is positively associated with (what men call) his skill. He is most skilled in an occupation or profession who best performs the function associated therewith (*Pol.*, VII. iv. 5), and he who is a member of a higher-ranking occupation or profession (presumably) is more skilled than he who is a member of one of lower rank. Elsewhere (*ibid.*, I. xi. 6) he states: "Suffice it to say that the occupations which require most skill are those in which there is least room for chance: the meanest are those in which most damage is done to physique: the most servile are those in which most use is made of physical strength: the least noble are those in which there is least need for the exercise of goodness." See also *ibid.*, IV. iv. 12–18; VII. xv; also VII. iv. 3, where it is noted that the products of all producers are better when better materials and (presumably) instruments are used.

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In short, justice in exchange obtains if the batches of goods being exchanged are of like money value and sufficiently alike in want-satisfying capacity, and if these money values permit the (usually dissimilar) skills to be suitably or proportionately rewarded.[54]

In the course of his discussion of proportionate equality, Aristotle dealt with several difficult problems. (1) Since the parties to a voluntary transaction are usually complementary producers (e.g., doctor and farmer), each producing something sought after by the other, these unlike things must be made comparable if their exchange is to be facilitated. This is accomplished by the use of money, "an intermediate," which "measures all things, and therefore the excess and the defect" as well as "how many shoes are equal to a house." (2) But what is it that money really measures when it "makes goods commensurate and equates them"? Unlike things cannot in themselves be made commensurate for purposes of exchange. Accordingly, "all goods must be measured by some one thing," of which "money has become by convention[55] a sort of representative." This "some one thing" is usually represented as being "demand, which holds all things together"; and it is said to be "with reference to demand" that unlike things become "sufficiently" commensurate to make exchange possible, at least after "demand" has been converted into terms of money.[56] It is more accurate, however, as Soudek has suggested,[57] to employ the concept "need" instead of the concept "demand" to express Aristotle's meaning, even though he did not distinguish between the "need" or want of a person wanting a given good, and the capacity of such good to satisfy need and provide "want-satis-

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they have already exchanged (otherwise one extreme will have both excesses)." *Ibid.*, 1133^b, 1 ff. Aristotle here apparently is not emphasizing the fact that the marginal utility of an exchanger's holding of that which he has purchased falls as the size of this holding is increased through exchange. Soudek suggests (*op. cit.*, pp. 63–64) that Aristotle has in mind the comparative values that A and B set on C and D when bargaining between A and B begins and the fact that through bargaining these comparative values are brought into balance whereas, if there were no bargaining, the exchange ratio established between the products of A and those of B would tend to be much more advantageous to one of these parties than to the other. See below, note 59.

[54] Suppose A:B::C:D, and goods C and D are equal in money value. Then the rewards going to A and B are equal in money value. If, however, A is more skilled than B, then A should be required to offer correspondingly less of his work or skill in exchange than should B. Thus, if one supposed A to be twice as skilled as B, one might infer that one hour of A's labor approximated in value two hours of B's labor. Aristotle did not make any such inference, however, since he did not look upon labor-time as a measure of value or input or cost.

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[57] *Op. cit.*, 60–61.

faction." [58] Whence equality in exchange obtains between parties A and B to a transaction if each receives from the other an amount of want-satisfaction which he considers at least equal to that which he is surrendering and when the money value of the good received in exchange is equal to that given up.[59]

(3) While two batches of goods and hence two quantities of want-satisfaction may be exchanged at once, this is not necessary. Suppose A delivers C to B but, not needing B's product D at the time of the exchange, prefers not then to receive it in exchange for C. Under these circumstances A will accept money from B, money being, "as it were," A's "surety" which in the future may be turned over to B for D or its equivalent.[60] Since it is assumed that the money,

[58] Aristotle, of course, derived the value of a good from its utility, which in turn was subject to variation. E.g., see *Nic. Eth.*, 1156ᵃ, 23 ff., where he says that "the useful is not permanent but is always changing"; and 1163ᵃ, 10 ff., where he considers "whether we ought to measure a service by its utility to the receiver."

[59] "That demand [i.e., reciprocal need] holds things together as a single unit is shown by the fact that when men do not need one another, i.e., when neither needs the other or one does not need the other, they do not exchange, as we do when some one wants what one has oneself, e.g., when people permit the exportation of corn in exchange for wine. This equation therefore must be established." See *Nic. Eth.*, 1133ᵇ, 7 ff., and 15 ff., where it is said that "all goods must have a price set on them, for then there will always be exchange, and if so, association of man with man." See also *ibid.*, 1164ᵃ, 18 ff. where he indicates that the terms of an association between two parties will be fulfilled only when reciprocal need and advantage are present.

When discussing friendship (under which head he included even associations between individuals based solely on "utility" [*Nic. Eth.*, VIII. iii; Ross, *op. cit.*, pp. 230 ff.]) Aristotle observed that since suppliers and purchasers set different values on the same thing, it became necessary to determine which value was the more just, and he concluded that the receiver's appraisal was the best measure. "Now if the friendship is one that aims at utility, surely the advantage to the receiver is the measure. For it is he that asks for the service, and the other man helps him on the assumption that he will receive the equivalent: so that the assistance has been precisely as great as the advantage to the receiver." Later he writes: "The law holds that it is more just that the person to whom credit was given should fix the terms than that the person who gave the credit should do so. For things are not assessed at the same value by those who have them and those who want them; each class values highly what is its own and what it is offering; yet the return is made on the terms fixed by the receiver. But no doubt the receiver should assess a thing not at what it seems worth when he has it, but at what he assessed it before he had it." See *Nic. Eth.*, 1163ᵃ, 16 ff., 1164ᵇ 13 ff. also 1164ᵃ, 23 ff.

Aristotle does not concern himself with how prices are formed in the market, at most implying that parties to a transaction bargain with each other before settling upon terms and completing the transaction. He supposed, of course, that "all or most men choose what is advantageous" (*ibid.*, 1162b, 35 ff). Had Aristotle had the concept of a contract locus at his disposal, he would probably have said that justice in exchange was to be found in the middle region of the locus, provided that this was compatible with receipt by the exchangers of rewards which correctly reflected the difference between their respective skills.

[60] *Nic. Eth.*, 1133ᵇ, 10 ff. Aristotle states that while money "is not always worth the same," its value or worth "tends to be steadier" than that of other things (*ibid.*). While Aristotle here recognizes money's function as a store of value just as he recognizes its function as a unit of account, he looks upon both these functions as being corollary to money's primary function as a medium of exchange which facilitates both exchange and barter. Cf. note 15 above.

if it is properly used,[61] will presently be exchanged for D or its equivalent in goods, we have what amounts to a barter transaction even though it is not completed simultaneously with B's receipt of C. (4) Dissimilar goods and dissimilar quantities of goods (e.g., so many pounds of corn, so many shoes) have been made commensurate by expressing them in terms of want-satisfying power and then of monetary value; and the quantity C offered by A has been made equal to the quantity D offered by B. This transformation tells us nothing, however, of the comparative value of that something of A's which goes into C, or of the comparative value of that something of B's which goes into D. This something apparently is skill, and it varies with occupation, "for there is nothing to prevent the work of one being better than that of the other," exchangers being "in general people who are different and unequal" and "must be equated." [62] Accordingly, Aristotle's analysis implies, if some men are more skilled than others, they will produce more want-satisfaction per time period and hence will command more want-satisfaction or money per time period. Thus if A is four times as skilled as B, and A's product C is equal in money value to B's product D, the proportion A:B::C:D implies that A gives up only one-fourth as much work (or work-time) as does B, or that A commands a time-rate four times that of B when each is paid according to his merit or his contribution of want-satisfaction. Justice in exchange thus entailed (a) the exchange of things which were equal in value, and (b) reward of the exchangers in proportion to the skill that entered into the things exchanged.[63]

In the *Politics* Aristotle was concerned almost entirely with distributive justice, though he indicated that each of the diverse elements composing the polis should contribute as much as it receives,[64] and he noted that monopoly

[61] See note 15 above.

[62] *Nic. Eth.*, 1133^a, 12–18. "In all friendships between dissimilars it is, as we have said, proportion that equalizes the parties and preserves the friendship; e.g., in the political form of friendship the shoemaker gets a return for his shoes in proportion to his worth, and the weaver and all other craftsmen do the same." *Ibid.*, 1163^b, 28 ff. Aristotle has in mind interoccupational variation in skill, not intraoccupational variation. For just as he conceived of society in hierarchical terms, so also did he conceive of occupational skills in hierarchical terms. Members of occupations requiring greater skill made greater or more meritorious contributions than did members of occupations requiring relatively little skill and hence deserved proportionately greater rewards. He did not discuss the recruitment of occupations, though he recognized that it depended upon more (e.g., birth, education, chance) than the possession of natural ability. His implied comparative rating of occupations did not coincide with that expressed in the market place. See note 52 above.

[63] Justice in exchange entails "proportionate reciprocity" and this, as Soudek (*op. cit.*, pp. 61–62, 73–74) explains in detail, implies that A/C:B/D::A/D:B/C, and that A/C: A/D::C/D::B/D:B/C. Then the skills of A and B are suitably rewarded and the ratio of exchange of A's product for B's is the reciprocal of the ratio of the utility of what A gives away to what he receives.

[64] "The well-being of every polis depends on each of its elements rendering to the others an amount equivalent to what it receives from them." See *Pol.*, II. ii. 4. Elsewhere (*Nic. Eth.*, 1164^b, 31 ff., cp. also 16 ff.) he said: "To kinsmen, too, and fellow-tribesmen and fellow-citizens and to every other class one should always try to assign what is appropriate, and to compare the claims of each class with respect to nearness of relation and virtue or useful-

operates to elevate prices and profits.[65] As in his ethical writings, he stressed reward according to merit. "But that equals should be given unequal shares, and men on a footing of parity treated on a basis of disparity, is a thing which is contrary to nature; and nothing contrary to nature is right." [66] Yet, though he concerned himself with the distribution of offices, honors, rewards, etc., rather than with that of wealth and income, he confined his discussion to criteria of merit, giving little attention to means of measuring it. In general, he believed that the criteria of merit adopted should reflect the true purpose of the state and contribute to its realization.[67]

It is evident, in the light of what has been said, that Aristotle, with his emphasis upon demand and his neglect of costs, was a forerunner of the Austrian rather than of the English classical school. There is no evidence, however, in his ethical and political writings, to suggest that he understood the imputation principle sufficiently to make application of it. In these writings, it is true, he always emphasized reward according to merit or productivity, particularly when he was treating of distributive justice and of exchange between possessors of different and unequal skills. But he never undertook to determine how much more skilled a member of one occupation was than a member of some other occupation, or how much greater was the claim of a member of one class to reward or office than was that of a member of another class. And he disregarded the fact that product is imputable to other than human factors of production.

It is with respect to the evaluation of comparative skills that Aristotle might have indicated the applicability of the imputation principle, since he implied that some skills were more productive of want-satisfaction than others.[68] But he did not do so. On the assumption that A's product C and B's product D are of equal value when they are exchanged, one may infer from one of Aristotle's proportions (e.g., from A:C::B:D) the ratio of the skill of A to that of B, provided that one knows (say) how long it takes A to produce C and B to produce D. If, however, given monopoly or ineffective bargaining, it is open to question whether C and D are equal, it is not possible to determine so nicely how A's skill compares with B's. Nor does Aristotle indicate how one may independently determine the value of A's skill and B's and proceed thence to

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ness. The comparison is easier when persons belong to the same class, and more laborious when they are different."

[65] *Pol.*, I. xi. 9–13. Athenian price regulations are mentioned in his *Atheniensium Respublica*, 51.

[66] *Pol.*, VII. iii. 6–7.

[67] *Pol.*, III. ix, xii.

[68] Aristotle distinguished between instruments of production which aimed at a "result beyond the immediate doing" and instruments of action (e.g., slaves, household property) which aimed at rendering an immediate service. See *Pol.*, I. iv. 4 and note. Elsewhere he says: "All art is concerned with coming into being i.e., with contriving and considering how something may come into being which is capable of either being or not being, and whose origin is in the maker and not in the thing made." See *Nic. Eth.*, VI. iv; also v, where he states that "making has an end other than itself, action cannot; for good action itself is an end." See note 10 above.

discover the just exchange ratio between the products of these skills;[69] when and/or how one may proceed from the values placed upon products by the market to the comparative value of skills; or whether the prices commanded by suppliers of skill are satisfactory indexes of the comparative values of skills.

IV

We terminated our review (in Section II) of Aristotle's views as expressed in *Topica* with the conclusion that they were not very significant for economic analysis. We found little if any evidence (in Section III) that Aristotle had made use of the views developed in *Topica* when subsequently he discussed economic subjects in the *Politics* or in the *Nicomachean Ethics*. It would appear to follow that the views expressed in *Topica* exercised little influence upon the subsequent development of economic analysis, both because of their nature and because scholars usually turned to these two last works for Aristotle's opinions on economic matters.

Our inference requires some additional confirmation, however, before it may be accepted. For it remains possible that students of Aristotle could have noted the rules laid down in *Topica* (as the result either of initial study of this work, or of its study after prior study of the *Rhetoric*) and later have made application of these rules in economic analysis. That such was the case is doubtful, of course. We must, however, for the present defer the detailed analysis of medieval literature which complete confirmation of our inference would require.[70]

Despite our emphasis upon the shortcomings of Aristotle's analysis it remains true that some of his economic analysis was of a high order, even as various commentators have pointed out.[71]

[69] Despite his recognition that better materials (and presumably better instruments) make for better products (*Pol.*, VII. iv. 3), Aristotle usually writes as if differences in skill are responsible for all differences in the value of product.

[70] It is of interest that Cicero, in his *Topica*, touches very little upon the subject matter of Aristotle's work though it suggested Cicero's title. Only in one place (XVIII, 69–70) does Cicero make statements (e.g., that ends are superior to means; that natural qualities are superior to acquired qualities; etc.) which could have been inspired either by Aristotle's *Topica* or by his *Rhetoric*, but he says nothing pertaining to economic analysis.

[71] E.g., see Soudek, *op. cit.*; Kraus, *op. cit.*; and W. Gelesnoff, "Die oekonomische Gedankenwelt des Aristoteles," *Archiv für Sozialwissenschaft und Sozialpolitik*, L, 1923, pp. 1–33.

DECREASING AVERAGE COST AND THE THEORY OF RAILROAD RATES*

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The question whether or not railroads operate under conditions of decreasing average cost has always been regarded as a crucial one in railroad economics.[1] At the turn of the century, specialists probably were virtually unanimous in the belief that railroads did in fact operate under decreasing average costs, and most would have regarded the truth of the proposition as all but self-evident. As the concepts of fixed and variable costs (and their relations to total cost) became clearer, however, it came to be more widely appreciated that the shape of the average cost curve of railroads over the normal range of their outputs was a difficult empirical question which could not be settled by the *a priori* methods so long current in the field. In the wake of this reaction to the traditional view, numerous statistical investigations of the slope of the average cost curve were and still are being set under way. Though the issue is still far from conclusive settlement, perhaps the balance of specialist opinion today leans toward the belief that average costs are probably not decreasing over the normal operating range.[2]

Considerable effort has thus been devoted over the last 50 years to testing the material truth of the assumption of decreasing average cost for railroads, but

* This paper is an outgrowth of a larger study of price discrimination in the railway industry undertaken while the author was a Fellow of the Social Science Research Council. The author is also deeply indebted to Fritz Machlup of The Johns Hopkins University who read the manuscript and offered numerous and important suggestions for its improvement.

[1] In the literature the question is sometimes stated in terms of decreasing average cost, sometimes in terms of "increasing returns (to scale)" and sometimes in terms of "excess capacity." Although there are certain differences among these terms properly defined and although some writers on railway economics do insist that they are deliberately using one of the terms in preference to the others, the differences are not important for the kinds of arguments considered in this paper. While the terms can be taken as synonymous for present purposes, the formulation in terms of average cost has the advantage of emphasizing precisely what is relevant for the pricing problems here studied. It hardly need be stated that total cost is to be taken in its economic rather than its accounting sense and thus excludes such things as capitalized monopoly rents and the value of past expenditures for investments which do not have to be replaced. It should also be noted that unless otherwise specified, the relevant time period is that of the Marshallian long-run.

[2] Among the many contributors to the statistical study of the problem have been J. M. Clark, *Studies in the Economics of Overhead Costs* (Chicago: University of Chicago Press, 1923); M. O. Lorenz, "Cost and Value of Service in Railroad Rate-Making," *Quarterly Journal of Economics*, Vol. 30, No. 2, 1916, pp. 205–232; Kent T. Healy, *The Economics of Transportation in America* (New York: Ronald Press Co., 1940); and George H. Borts, "Production Relations in the Railway Industry," *Econometrica*, Vol. 20, No. 1, 1952, pp. 71–79. There have, of course, been innumerable studies of aspects of the problem by the various regulatory commissions, one of the most influential studies being that of Ford K. Edwards, *Study of Rail Cost Finding for Rate Making Purposes* (California Railroad Commission, 1938).

much less attention has been given to the basic significance of the assumption itself. Few investigators have ever stopped to ask themselves just what is supposed to follow once the assumption is verified or rejected; or why it is more urgent to solve this particular empirical question than any of a number of others pressing for examination. Had they done so they would have found that the number of interesting conclusions for which the shape of the average cost curve is decisive (or even relevant) is much smaller than has been supposed. And even where the shape of the curve is in fact relevant, many additional and so far unestablished empirical generalizations are usually required before one can make the kinds of judgments ordinarily believed to follow directly from the mere assumption of decreasing average costs.

A search through the extensive literature of railway economics will disclose the existence of many propositions which depend, or at least seem to depend, for their validity on the prior assumption of decreasing average cost. The precise content of these judgments varies considerably, but for the most part they have in common the assertion of some significant relationship between (1) decreasing average cost and (2) what economists would interpret as a policy of price discrimination in the setting of rates. The following passage from Sharfman's monumental study of the Interstate Commerce Commission can serve as a reasonably clear, brief summary of the most important of these assertions.

> If a carrier, at a given juncture, does not command sufficient traffic to utilize its plant to capacity, it might prove of advantage to all concerned to attract additional tonnage at rates below actual cost of carriage, if not below any assignable costs, in order that the general overhead may be spread, albeit unevenly, over a larger volume of traffic. For the carrier the earnings derived from the additional traffic may afford the only opportunity to realize a net return or even to cover the unavoidable aggregate of fixed costs; for the shippers accorded the depressed rates, the differential treatment may afford the only basis for reaching new markets, or, because of the existence of alternative channels of transport, for utilizing the facilities of the particular carrier; for the shippers paying the relatively higher rates and apparently discriminated against the added traffic may result in lower absolute charges than would be possible without its contribution to general expenditures; for the community, finally, there tends to accrue the advantages of fuller utilization of its economic resources.[3]

[3] I. L. Sharfman, *The Interstate Commerce Commission*, Part III, Volume B (New York: The Commonwealth Fund, 1936). Some railway economists would argue that the rate policy implicit in Sharfman's position and their own similar statements of the problem are not equivalent to the economists' model of pure price discrimination. They claim to visualize rather a model in which the railroad is permitted to discriminate (within wide limits) among the particular markets for its service, but in which the railroad is assumed not to be free to pursue maximum profits. The regulatory authorities are envisaged as controlling the general *level* of all rates in such a way as to limit profits to no more than a "fair rate of return."

Such a "hybrid" system of discrimination combined with average-cost pricing certainly does underlie much of the thinking not only of some railway economists, but of the regulatory authorities themselves. Nevertheless, the economists' model of discrimination is probably not dangerously far off the mark as a description of the rate-making process in practice. The rate *level* half of the hybrid system has, for many reasons, never been enforced against individual railroads with sufficient speed and precision to require anything but

It is the purpose of this note to explore in some detail the connections between the existence of decreasing average costs and the social gains which Sharfman and others believe could be achieved by permitting railroads to practice price discrimination. The method employed will be to construct an inventory, as it were, of market situations in which social gains could be made by permitting discrimination, and then to see the extent to which the results are affected by different assumptions about the shape of the average cost curve. The pricing systems to be compared with discrimination on this basis will be (1) *simple* or *uniform monopoly pricing*—which would correspond in the terminology of railway economics to the situation under a so-called *pro rata* law—and (2) *uniform average-cost pricing*—which would be equivalent to pricing according to the *cost-of-service* principle.[4] The comparisons will be concerned primarily with the size of *aggregate* railway output, but reference will also be made to the important subsidiary problem of output (and prices) in particular markets for railway service.[5] In addition to the customary simplifying assumptions necessary for this type of analysis, it will be assumed, except where a broader assumption may change the results, that a railroad can distinguish only two separate markets for its service.[6]

I. AGGREGATE RAILWAY OUTPUT UNDER PRICE DISCRIMINATION AND UNDER UNIFORM MONOPOLY PRICING

A. *The Situation Where Neither Market Would be Served under Simple Monopoly Pricing, Whereas both Are Served under Discrimination*

It is possible that the maximum net revenue which can be earned by a railroad following a policy of simple monopoly pricing might not be enough to cover total

minor qualification to the assumption of profit maximization. It seems highly probable, furthermore, that any future tightening up on the rate level half of the hybrid system would merely unhinge the discrimination half. In the absence of the normal business pressures to improve earnings it is hard to see just what forces would impel the managers of a privately-owned railroad to strive continually toward the optimum pattern of rates under discrimination; that is, to push steadily toward a position of equal marginal revenue in all markets. The result is likely to be rather a system of haphazard rate differentials; one which bears so little relation to the optimum pattern under rational discrimination that it would be impossible to generalize about its welfare implications or to compare its workings with any of the consistent alternative systems of rate-setting.

[4] A third possible alternative, of course, would be *marginal-cost pricing*. But since reference to this standard is extremely rare in railway economics and since adequate consideration of it would lead too far afield, the analysis will be restricted to the two traditional standards.

[5] This subsidiary problem is important because a change from a policy of uniformity to one of discrimination might or might not result in lower rates to all shippers. If lower rates in all markets did occur, then, other things equal, any increase in total output obtained via price discrimination would be a clear net gain to society. All the difficult ethical and practical problems of compensation which arise when some people gain and others lose from a change would be neatly avoided.

[6] The conventional simplifying assumptions (over and beyond all those inherent in the theory of the firm as such) are: (1) that the railroad is a pure monopoly, (2) that its output is homogeneous, (3) that the separate markets are independent and (4) that there are no special price-making costs in connection with a policy of price discrimination.

costs. Hence, if the railroad were restricted by law to such a price policy, the line would either not be built or, if already built, the owners would begin to disinvest and ultimately would abandon operations on the line. As Mrs. Robinson has shown, however, there must always be a certain (normally wide) range of possible outputs over which the maximum revenue obtainable from a policy of price discrimination exceeds that obtainable from uniform pricing.[7] This extra revenue from discrimination might well prove to be the difference between life and death for a railroad. If so, we could validly conclude that in such an "all-or-nothing" case aggregate railway output under discrimination would be larger than that under uniform pricing (by the entire amount of the output).[8] What is more to the point, we could also conclude that if price discrimination were in fact the only one of the price policies compatible with long-run survival, then the optimum output of the discriminating firm must necessarily lie within the range of outputs over which average cost is decreasing.[9] Or, to put the matter in a slightly different way, if the demand for the service of a discriminating railroad were large enough to carry its output into the zone of *increasing* average cost, then a requirement of uniform pricing could not force the railroad into bankruptcy.

The significance of the all-or-nothing case

We have, thus, to begin with, at least one clear case in which the supposed benefits of discrimination are in some sense necessarily connected with the existence of decreasing average costs. It is a case, moreover, which might well have considerable relevance for regulation policy at certain stages of railway development. But taken at face value, this special case certainly does not seem to merit the vast amount of attention it has received in discussions of discrimination in traditional railway economics. In fact, since there is much evidence that the conclusions drawn from the all-or-nothing model have definitely been improperly applied in the traditional literature, skepticism about its practical significance is greatly strengthened. The all-or-nothing case seems to have reached its central position in discussions of rate policy largely under false pretenses.

For example, one very common misinterpretation which has undoubtedly

[7] Joan Robinson, *The Economics of Imperfect Competition* (London: Macmillan Co., 1933).

[8] It is also clear that this gain in output from discrimination is obtained without injury to any class of shippers.

[9] This must be so because the curve of discriminating marginal revenue—which is merely the horizontal summation of the marginal revenue curves of the separate markets—lies below the demand curves from which it is derived and hence below the simple monopoly average revenue curve—which is the horizontal sum of the separate demand curves. But the simple monopoly average revenue curve must lie wholly below the average cost curve or else there would, of necessity, be some output at which total costs could be covered via uniform pricing. Hence all points on the curve of discriminating marginal revenue—including the point of intersection with the marginal cost curve which determines the optimum output—must also be wholly below the average cost curve. And wherever there is a point at which marginal cost lies below average cost it is elementary that average cost is falling in the neighborhood of that point.

contributed to the overemphasis of the all-or-nothing model is the belief that it is not a special case, but merely the most extreme (and most easily demonstrated) example of the *general* case for discrimination.[10] In its simplest form, the argument is nothing more than the assertion that since profits per unit of output are always larger under discrimination than under the alternative systems of pricing a monopolist must always be led by his own self-interest to carry production further under discrimination. This argument, though admittedly plausible, is seriously in error. Extended discussion of the nature of the error, however, is unnecessary since the conditions under which discrimination does *not* yield a larger output than uniform pricing have been described at great length by Mrs. Robinson (and are touched upon in other parts of this paper).

A somewhat more complicated version of essentially the same argument stresses the effect of the extra margin of revenue under discrimination as an incentive to expand the total investment in the railroad. With a larger plant, output of service would presumably also be larger under discrimination. The fundamental error in this reasoning, of course, arises from a failure to understand the nature of the long-run cost curve as an "envelope" of the short-run plant curves. The variables which determine the optimum level of investment, in other words, are precisely the same as those which determine the level of output. Hence, Mrs. Robinson's demonstration that output will in some circumstances be larger under uniform pricing than under discrimination automatically shows that plant size will be larger as well. Only if even the minimum feasible increments in the size of railway plant must be made in such large amounts that the long-run average cost curve is discontinuous do we have something closely analogous to the all-or-nothing situation. Here the uniform demand curve may lie wholly below the average cost curve of the next larger plant, but just close enough so that the extra margin of earnings under discrimination in conjunction with the lower marginal cost curve of the larger plant makes the expansion feasible. In such a case, it is highly probable, though by no means absolutely certain, that output as well as investment will be larger under discrimination.[11] There

[10] The origins of this belief can be traced well back into the 19th century. One of the most important early exponents, from the standpoint of history of doctrine, was A. T. Hadley, *Railway Transportation* (New York: G. P. Putnam's, 1885). Not only did Hadley have an enormous influence on subsequent American writers on railway problems, but the basis of the modern theory of price discrimination was developed in part as an attack on Hadley by A. C. Pigou, *Wealth and Welfare* (London: Macmillan Co., 1911).

[11] It is not certain because once it is found that uniform pricing can yield a revenue large enough to support some long-run output from a given plant it may also be true, as will be seen in Sections B and C, that total output from this plant under price uniformity will be larger than under discrimination. Total profits at most ranges of output, however, will be higher under discrimination, possibly by enough to justify a lump-sum investment in a much larger plant. The marginal cost curve then applicable under discrimination will be lower than that applicable under uniformity, but must be sufficiently far below the curve applicable to the smaller plant to offset the initial smaller output under discrimination with the smaller plant. The range of outputs, however, in which the new-plant marginal cost curve is too high to offset the initial handicap, is necessarily very small relative to the total range.

Even if output were larger under discrimination in this modified all-or-nothing situation

is little evidence to suggest, however, that this extension of the all-or-nothing case has any great significance for the discussion of discrimination in the railway industry.[12]

An entirely different, though equally dangerous extension of the all-or-nothing case for discrimination is represented by the tendency to treat the existence of decreasing costs as a *sufficient* condition for the emergence of an all-or-nothing problem. Actually, of course, proof of the existence of decreasing costs tells us merely that the all-or-nothing case cannot be definitely excluded. An enormous amount of additional information must be assembled before the all-or-nothing case can be taken as a decisive basis for public policy in any specific case. In point of fact, this information has not been assembled either by the authorities or by independent researchers and it is easy to see why. On the cost side, for example, an estimate is obviously required not merely of the slope of the long-run average cost curve but of its actual value over a wide range of outputs.[13] On the demand side, the necessary estimate of the extra margin of revenue from discrimination must make full allowance for such things as the interdependence of existing markets for service; for the possible induced shifts in the location of industry following a change in rate policy; for the great difference in the "quality" of service rendered in various markets and for the nonhomogeneity of railway output generally; for the induced changes in the rate level of competing transportation methods and so on. It is by no means clear how such estimates could be made or how, on the basis of existing techniques, one could determine

it does not also follow, as it did in the true all-or-nothing case, that prices will be lower in all markets. An expansion of output due to discrimination when the long-run cost curve is discontinuous is essentially similar as a matter of analysis to an expansion of output with a continuous average cost curve and decreasing *marginal* cost curve. For the relationship between decreasing marginal cost and the effect of discrimination on price in the higher priced markets see pages 11–12 below.

[12] Actually, of course, some discontinuity always exists and its importance will depend on the size of the units of output and sale as well as the time periods considered. An extra train or even an extra car may represent a discontinuous increase in plant size to which all-or-nothing reasoning might be applied in defense of discrimination, provided the period of time is short enough and the unit of sale small enough. In point of fact, however, freight rates on isolated or sporadic movements are not important as a percentage of total output and because of high costs of pricing, little effort is expended by any railroad in trying to apply accurate discrimination to them anyway. In practice, the minimum unit of *sale* for pricing purposes is so much larger than the minimum sensible unit of output that the traditional defense of discrimination in terms of carrying an "extra barrel of flour" is simply irrelevant. The important empirical question with respect to discontinuity is whether increases in size of plant (in the ordinary and familiar meaning of that term) are in fact markedly discontinuous. On this question incidentally some considerable light has been thrown as a by-product of research into the shape of the cost curve. In rejecting early crude views that a certain high percentage of railway costs were permanently "fixed costs," most of the researchers cited above have shown that investment in railroad plant is for all intents and purposes continuous once the basic line has been constructed.

[13] Existing cost studies are not adequate in this respect mainly because they fail to make full allowance for the many and fundamental differences between economic and accounting cost. At best they could only tell us whether discrimination were necessary to preserve the historical investment of the existing owners.

even whether the gain from discrimination was of the order of 1 per cent or of 100 per cent. But certainly little progress along these lines seems likely as long as the obsession of research workers with the problem of the shape of the cost curve continues.

B. *The Situation Where both Markets Would Be Served under Uniform Monopoly Pricing or under Discrimination*

At the other extreme from the all-or-nothing case where no service can be provided in the long-run under uniform pricing are those situations in which the railroad can follow a policy of non-discrimination, provide some service to *both* markets and still earn a net profit. Such a model might be appropriate, for example, for the analysis of many problems arising under Section 4 of the Interstate Commerce Act (which, subject to certain qualifications, makes it unlawful for a railroad to charge less for a through-haul than for a short-haul to an intermediate point on the same line and direction). That some service is going to both markets is often taken for granted and the problem is simply to assess the effect on total output of the requirement of uniformity.

For the two-market situation of this model, Mrs. Robinson has shown that the relative size of output under the two pricing methods depends entirely on the shapes of the demand curves. A more precise statement of her results is not necessary at this point, since the relevant consideration for our purposes is merely the absence of any reference to the shape of the average cost curve. Contrary to so much of traditional railway economics, the existence of falling average costs has simply no bearing whatsoever on the case for discrimination in this particular situation.[14] It is entirely possible that discrimination may lead to a larger output than would be supplied under uniform pricing even if unit costs are increasing; and, conversely, discrimination may lead to a smaller output than would be supplied under a rule of uniform pricing even if considerable excess-capacity exists and unit costs are decreasing.[15]

[14] Many examples of errors due to neglect of the demand side and overemphasis on the shape of the average cost curve in models of this kind can be found in Ralph L. Dewey, *The Long and Short Haul Principle of Rate Regulation* (Columbus: Ohio State University Press, 1935). Not only is the shape of the average cost curve irrelevant for the comparison of the size of total output, but it has no significant relation in this market situation to the problem of whether any extra output from discrimination is obtained without raising prices in the less elastic market. The conditions under which discrimination raises total output without injuring any class of shippers in this two-market case are precisely the same as in the three-market situations discussed on page 12 below.

[15] If, by discrimination, one means the kind of hybrid system of discrimination-cum-average-cost pricing described in note 3, then these conclusions must be somewhat qualified. Under the hybrid form of discrimination, output *could* always be at least as large or larger than under uniform monopoly pricing regardless of the shape of the demand curves. The word "could" is important, however. Merely forcing management to follow the simple criterion for optimum discrimination—i.e., to equate marginal revenue in all markets—and then eliminating monopoly profits by reducing both rates in such a way as to maintain the equality of marginal revenue is not enough to guarantee that output will in fact be larger. Where the demand curve in the weaker market has, in Mrs. Robinson's terminology, a larger "adjusted convexity" than the higher-priced market, then there must be some

C. *The Situation Where One Market Could Be Served under Uniform Monopoly Pricing, Whereas Both Could Profitably Be Served under Discrimination*

Intermediate to the situations so far described are those in which long-run profitable output is possible under a policy of uniform monopoly pricing, but where a conversion to discrimination would permit service to be extended to an additional market. The highest obtainable price in the weak market, in other words, is less than the optimum uniform price. In such cases, Mrs. Robinson has shown that if discrimination permits profitable entry into the weak market, then total output will be larger under discrimination (though not necessarily by the full amount of the new traffic). Clearly, one possible example of such a situation might be that envisioned in the earlier quotation from Sharfman in which even the highest price obtainable in the weak market is below average cost at the optimum output under uniformity. Hence the market can never be profitably served at uniform prices but might be served under a policy of discrimination. When a market is, in fact, entered under discrimination by means of a rate "below-cost" then it follows not only that output will be larger, but that average cost must be decreasing.

Since decreasing average cost may be associated in this way with the possibility of achieving a larger total output under discrimination, does it follow that demonstration of the existence of decreasing average cost will strengthen the case for discrimination? Traditional railway economics seems to be based on the belief that the demonstration does enormously strengthen the case, but such a view cannot be accepted. In the first place, the important element in this so-called "added-traffic" case for discrimination is not the rate-below-cost, but the new market. Even when average cost is increasing, abandonment of a policy of uniform monopoly pricing may permit service to be extended to a market which had previously been entirely excluded. If so, total output will increase and there will be precisely as strong a case for permitting discrimination in the one situation as in the other. The only possible way to make the added-traffic case for dis-

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range of outputs for which discrimination yields a smaller average revenue than uniform pricing. A profit-maximizing monopolist whose optimum output was in this zone would simply abandon discrimination; but not so a firm following the discrimination rule mechanically in response to regulative order rather than with a view to maximum profits. If the regulated firm did not abandon discrimination under these conditions then it is entirely possible for the output at the intersection of the discriminating average revenue curve with the average cost curve to be less than the output under uniform monopoly pricing. The zone of possibly unfavorable results under hybrid discrimination would be even larger, of course, if the alternative were uniform average-cost pricing. To guarantee, therefore, that hybrid discrimination is never inferior to uniform pricing, it is necessary to assume that the rules laid down by the regulatory authorities provide some method for recognizing the unfavorable situations and forcing management in such cases to abandon the practice of discrimination.

Although the conclusions as to relative size of output must be qualified when the hybrid definition of discrimination is used, no adjustment need be made to the evaluation of the role of decreasing average cost in these output comparisons. If the formidable administrative difficulties connected with the hybrid system are somehow solved successfully, then hybrid discrimination will always yield a larger output than uniform monopoly (or average-cost) pricing. But it will yield it regardless of the shape of the average cost curve.

crimination look overwhelming when average costs are decreasing and for that case to vanish entirely in the rising zone of the cost curve is to adopt the widespread, but rather misleading, definition of discrimination as charging "rates below cost."[16]

It might be argued that there is nevertheless some practical, if not logical, value in stressing the connection between decreasing costs, rates-below-cost and discrimination. If average costs are increasing, there is no simple method available for determining whether discrimination has or has not led to an increase in total output. But if we could prove that average cost was indeed decreasing and could point to a rate which was below cost, then we could validly conclude that discrimination was, in fact, leading to a higher output than uniform monopoly pricing. The obvious dangers involved in any such direct leap from an abstract and simplified model to the real world need not be extensively discussed here. Apart from anything else, there would be the difficulty that railway output in the real world is far from homogeneous so that allowance must be made for the very different costs of carrying different commodities. At least one specialist has suggested that if such an allowance were carefully made, the conventional belief in the existence of a significant number of rates deliberately and profitably set below-cost on "low-grade" traffic would prove chimerical.[17]

In addition to the statistical difficulties, there is a further difficulty in connection with the pure model itself. The larger output that results under discrimination when a new market can be entered can be shown to be a necessary consequence of discrimination only when just two markets are used in the model. When somewhat more realistic models with three or more markets are used, it becomes possible that the added traffic from the new market might be more than offset by diversions of service from those markets that were already being served under the policy of uniform monopoly pricing.[18]

The effect of discrimination on shippers in the high-price market

The appeal of the "added-traffic" case for discrimination among railway economists has undoubtedly been greatly strengthened by the belief that if average cost were in fact decreasing the entry of the railroad into a new market could not injure the shippers in the less elastic market. Mrs. Robinson, however, has shown that such is not the case.[19] There is a very simple rule for describing

[16] Cf. the following very typical statements of the problem of "discrimination": "The practice of differential charging results in a situation which is very confusing to persons unacquainted with railroad economics, for the railroad is found to be carrying some kinds of traffic at less than the full cost of the service, yet is making a profit out of it." D. P. Locklin, *Economics of Transportation* (3rd Ed.) (Chicago: Richard D. Irwin, 1947)." . . . The characteristic feature of railroad discrimination is that many rates are less than the full cost of the service. The motive for this type of discrimination is found in the existence of the large mass of supplementary expenses." *Idem.*

[17] Healy, *op. cit.*, pp. 197–98; 204–06; and 211-212.

[18] For such a result to occur, it is necessary, but not sufficient that at least one of the demand curves in the markets served under uniform pricing be "convex" in Mrs. Robinson's sense (i.e., convex as viewed from above).

[19] *Op. cit.*, p. 205.

what must happen to the price in the less elastic market in a two-market situation involving penetration of a new market. If marginal cost is increasing, then price in the strong market will be higher as a result of penetrating the second market than it was under uniform monopoly pricing; if marginal cost is constant the price charged will be the same; and if marginal cost should be decreasing, then the change to discrimination will actually reduce the rate charged to customers in the strong market.

Notice that the shape of the average cost curve has no necessary bearing on the results. Even if some of the past or present statistical studies of the average cost curve of railroads could demonstrate conclusively that average cost was decreasing over the relevant range we would still have no justification for the assertion that discrimination does not throw a burden on other traffic in the added-traffic case. The best that can be said perhaps for the more traditional view is that since constant or falling marginal costs are much more likely to be associated with decreasing than with increasing average costs, the probability that discrimination will not burden other traffic is much higher if decreasing average costs are found to exist than if increasing average costs are shown. Yet once we extend the analysis to situations involving more than two markets, even this relatively weak connection between the shape of the average cost curve and the case for price discrimination can be shown to have little if any practical significance.

When the number of markets served under uniform pricing is large and when the change to a policy of discrimination permits the serving of an additional market, decreasing marginal cost becomes a necessary, but no longer a necessary *and* sufficient, condition for a lowered price in all the markets previously served. The increase in output as a result of the change to discrimination (assuming that an increase does occur) must be so large and the fall of the marginal cost curve over the relevant range so rapid that marginal revenue in the most inelastic of the previous markets is less than it was under uniform pricing.[20] Not only must marginal cost be decreasing quite rapidly, but it is easy to set up situations in which no possible rate of fall of the marginal cost curve would be sufficient to prevent a burden being thrown by discrimination (pure or "hybrid") on at least some of the other traffic. Such would be the case, for example, if demand in the least elastic market had an elasticity of less than unity at the uniform price. If so, the marginal revenue in that market under uniform pricing would actually be negative. In order for discrimination to injure no one under these conditions, marginal cost would also have to be negative at the equilibrium output under discrimination, a state of affairs which is an absurdity in a static model.

[20] Suppose, to take a simple numerical example, that the uniform price under a policy of simple monopoly were 15; and at that price the marginal revenue in the least elastic market were 7, while aggregate uniform marginal revenue (and marginal cost) were 10. Then, under discrimination, discriminating marginal revenue—which will, of course, be equal to the new value of marginal cost and will be the same in all markets—at the optimum larger output must be less than seven. In terms of the discontinuous plant case, the rule would be that the marginal cost *curve* of the new plant must not merely lie below that of the old, but sufficiently far below to bring down marginal revenue to the required level.

In the real world, where even relatively small railroads may serve hundreds of distinct markets, the probability is high that one or more of the least elastic markets for service would be "saturated" under a policy of uniform prices. Hence, the probability that perfectly accurate discrimination, either pure or "hybrid," would in practice be of universal benefit seems to be extremely small. And, more to the point, mere demonstration of the existence of decreasing average costs contributes nothing whatsoever to a precise evaluation of the probability.

II. AGGREGATE RAILWAY OUTPUT UNDER PRICE DISCRIMINATION AND UNDER UNIFORM AVERAGE-COST PRICING

A. *The Situation Where both Markets Would Be Served under Uniform Average-Cost Pricing or under Discrimination*

The same types of comparison can be employed to search for cases in which the shape of the average cost curve is significant when the alternative to discrimination is not uniform monopoly pricing, but the cost-of-service or uniform average-cost principle. Assuming a two-market model—and for comparisons with average-cost pricing the number of markets does not affect the results—two situations should be studied in addition to the all-or-nothing case.[21]

The first is that which arises when both markets would be served under either discrimination or uniform average-cost pricing. For this case it can be shown that the shape of the average cost curve is irrelevant. Total railway output will always be larger under the average-cost rule. This can be seen easily enough when average cost is increasing and, in fact, it has long been accepted doctrine in railway economics that a policy of average-cost pricing would be superior to discrimination in terms of total output if ever the range of decreasing unit costs has been left behind. It is much less obvious, however, that average-cost pricing is the superior policy in terms of output even when operations cannot be carried beyond the point of minimum unit costs under either policy. A graphical demonstration of necessary superiority of average-cost pricing is presented in Figure 1. For simplicity, straight-line demand curves have been assumed, but more complex assumptions in this respect would not change the essential elements of the proof.[22]

[21] The results in the all-or-nothing case with average cost pricing are so similar to those with uniform monopoly pricing that no separate consideration need be given them.

[22] In Figure 1, AB is the average cost curve and EFG the aggregate demand curve with uniform prices in both markets. The highest obtainable price in the weak market is, of course, F. Total output under uniform average cost pricing will be OM and the price in both markets ML. Marginal cost at output M can be found by drawing the line QR tangent to L and finding the point at which the line marginal to QR intersects ML. Discriminating marginal revenue at output M can be found (since we have assumed straight-line demand curves) by drawing the curve marginal to the segment FG of the aggregate demand curve. Since the demand curve intersects the cost curve at M from above, we know that the elasticity of QR at M is greater than that of FG and hence that marginal cost (MN) must necessarily lie above marginal revenue at that point. In fact, as drawn, marginal revenue is actually negative. But marginal revenue is not only below marginal cost at M, but the curve of marginal revenue must actually be declining in the neighborhood of that output.

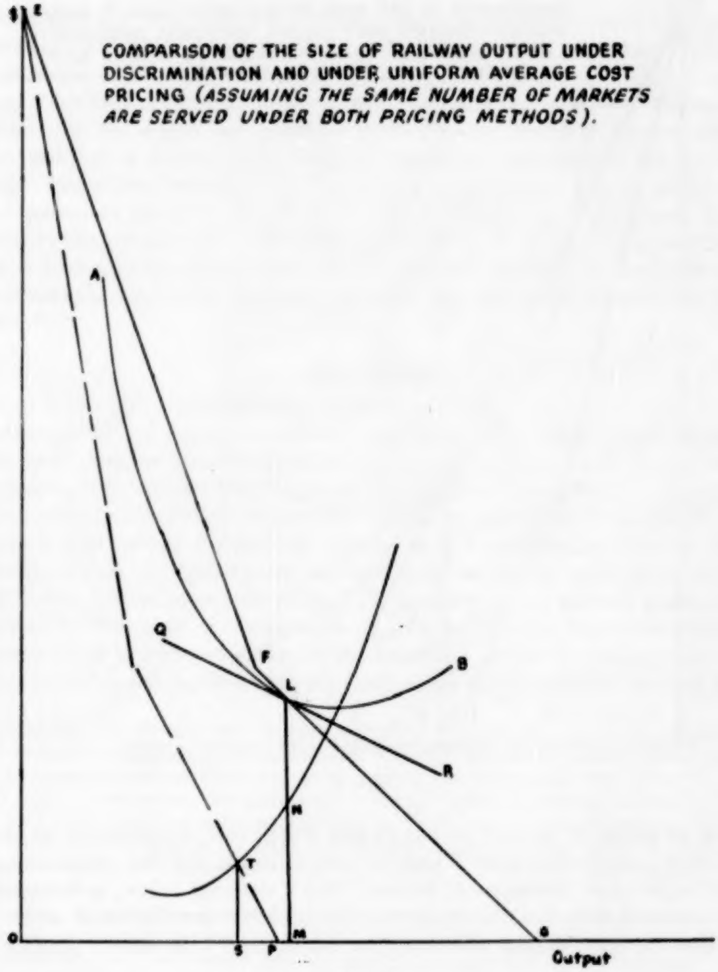

FIG. 1

B. *The Situation in Which Only One Market Could Be Served under Average-Cost Pricing, Whereas Both Markets Could Be Served Under Discrimination*

Situations in which only one market is served under average-cost pricing, but in which two are served under discrimination may arise whether average cost is

Marginal cost may be either rising, constant, or falling in the neighborhood of M, but if falling, must be falling less rapidly than marginal revenue (since demand cuts cost from above). Hence, the intersection T between marginal cost and marginal revenue—which determines the optimum output under discrimination—must lie to the left of ML, implying therefore, a smaller output under discrimination.

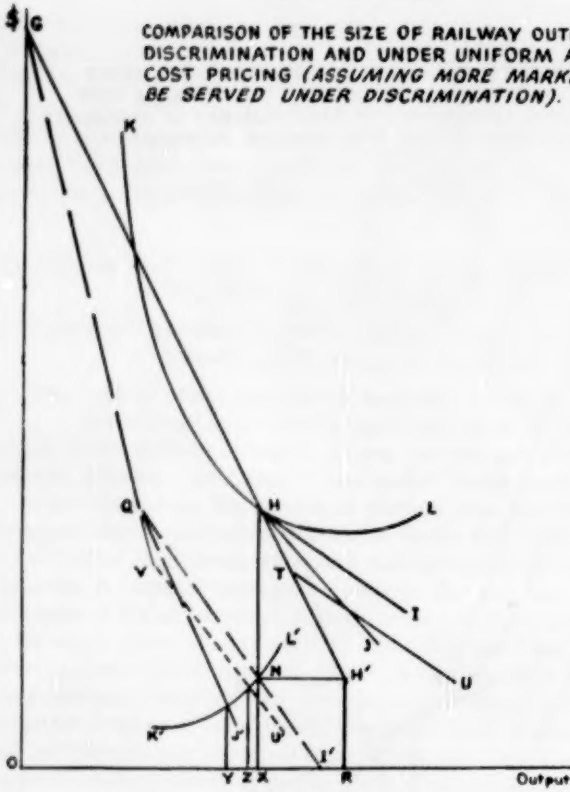

FIG. 2

falling or rising. If average cost is in fact rising, then it can easily be shown that there is no "added-traffic" case for discrimination and that output is necessarily larger under average-cost pricing.[23] But it does not follow, as has so often been assumed, that this relation is reversible and that discrimination necessarily provides the larger output when costs are decreasing.[24] It is entirely possible and

[23] Since price equals average cost under this policy, discriminating marginal revenue must lie below average cost at that output since it lies below price. But since average cost is rising, marginal cost must lie above average cost at the optimum output under uniform average cost pricing. Hence, the intersection between marginal cost and discriminating marginal revenue must lie to the left of the output under average cost pricing.

[24] It should be noted that even if discrimination did provide the larger output the mere fact that average costs were decreasing would not guarantee that a burden was not thrown on the high-price shippers. It can easily be shown that the conditions under which discrimination will benefit everyone in comparison with average-cost pricing must be similar in form to, but even more stringent than the conditions previously developed for uniform monopoly pricing. That is to say, it is necessary that marginal cost be decreasing faster than a certain critical rate, but the required rate of fall is greater under average-cost pricing than under uniform monopoly pricing.

reasonably probable that discrimination will reduce output as compared with average-cost pricing even though the ability to set rates "below cost" under discrimination enables sales to be made in the weaker market. Which of the two methods yields the larger output in any particular instance will be determined entirely by the shapes and positions of the demand curves in the two markets. Any attempt to develop with complete precision a statement of the conditions under which discrimination would and would not expand output would be far too space-consuming in the light of the limited objectives of this paper. The important thing is merely to show that the existence of a decreasing average cost curve does not strengthen the case for price discrimination and this fundamental conclusion as well as the outlines of the more general solution are shown in Figure 2.[25]

III. SUMMARY

Our inventory of market situations leads inevitably to the conclusion that the assumption of decreasing average costs is a far smaller element in the defense of rate discrimination than has hitherto been supposed. In none of the models was decreasing average cost both necessary and sufficient to guarantee a larger output under discrimination than under the other pricing alternatives. In three situations decreasing average cost was not even a necessary part of the case for discrimination: (1) Where both markets could be served under discrimination and under uniform monopoly pricing, the superior pricing method is determined entirely by the shape of the separate demand curves. (2) Where discrimination permits entry to a second market which could not be served with monopoly pricing, discrimination is always superior regardless of the shape of the cost curve.

[25] Suppose that the aggregate demand curve GHI consisted of two straight-line segments and intersected the average cost curve KL at the point H, at which point the lower segment of the aggregate demand curve was exactly tangent to the average cost curve. We know that output under average cost pricing must then be OX and that the firm will be indifferent as to whether or not it supplies even the first unit of service to the weaker market. But we also know that OX must be the output under discrimination as well, since, by virtue of the tangency of demand and average cost at H, marginal revenue must equal marginal cost at that point.

Taking this special case of equal outputs as a starting point, we can then observe the effects on output of changes in the slope and position of the demand curve. If, for example, the demand curve were steeper than HI, say HJ, then the appropriate marginal revenue curve (QJ′) would pass below the point N and output would be smaller under discrimination (OY, as compared with OX for uniform pricing). If the lower segment of the demand curve should have a slope equal to HI, but should have its "kink" to the right of H, say at T, then once again output would be smaller under discrimination since the marginal revenue curve VU′ must pass below N. If the kink should actually be displaced to the right until it hit H′, then output would be larger under uniform pricing as long as demand in the second market was anything less than perfectly elastic. For each position of the kink between the limits H and H′ there is a critical value of the slope of the aggregate demand curve. This critical value increases steadily as we move to the right, from a value equal to the slope of HI at H to a value of zero at H′. If at any point the demand curve is steeper than this critical value, then output will be larger under uniform pricing. If the curve is flatter, then and only then will the added-traffic theory be possible as a defense of discrimination.

(With three or more markets discrimination is only probably a superior method, but the probability is in no way dependent on the shape of the average cost curve.) (3) Where both markets could be served under discrimination and under average-cost pricing, discrimination is always inferior whether average cost be increasing or decreasing.[26] Only in the following circumstances did we find that decreasing costs were relevant to the case for discrimination. (4) Where the extra margin of earnings under discrimination is the difference between life or death for the railroad, discrimination is obviously superior in terms of size of output to the two alternative policies. We may be certain we are *not* confronted with such a case only if it can be shown that average cost is increasing in the neighborhood of the optimum output under discrimination. (5) Where discrimination permits entry to a second market which could not be served under average-cost pricing, average cost must be decreasing. But in such a case it is by no means certain that discrimination will in fact be the superior pricing method. And finally, (6) where any gain in total output due to the introduction of discrimination is obtained without a concomitant rise in the rate charged in the less elastic markets the shape of the average cost curve enters the analysis indirectly. Absence of injury to any class of shippers could occur only if marginal cost were decreasing and such a shape for the marginal cost curve is likely only when average cost is also decreasing. As a practical matter, however, the required rate of decrease of marginal cost is so large—and in the typical real-world situation probably impossibly large—that we may safely ignore this entire part of the traditional case for discrimination under conditions of decreasing average cost.

[26] The "hybrid" system of discrimination might be considered as still another case in which the shape of the average cost curve has no bearing on the evaluation of discrimination since "hybrid" discrimination could always yield as large or a larger output than uniform prices.

LAW, ECONOMICS, AND ANTITRUST REVISION

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I

It is perhaps no exaggeration to say that of all the problems American economists have struggled with in the last half century, they have less to show for their efforts in the area of monopoly and antitrust issues than in any other. As economists we have made little progress in helping adopt public policy to the needs and inevitabilities of the modern economy. Professor Mason, one of our distinguished authorities in this area, has said simply: "... the most that can be said of the results of monopoly investigations in economics is that they cast doubts on a number of traditional legal attitudes on the question of monopoly and restraint of trade, and that they emphasize a number of relevant considerations usually neglected by interpreters of public policy."[1] But when these considerations have been translated into suggestions for policy, economists have failed to provide Congress, administrative agencies, and the courts with any tangible, concrete criteria on the basis of which they might proceed without equivocation in developing or executing an appropriate and unambiguous program. One might almost be driven to conclude that, economists being on the whole ingenious fellows, their failure to have come up with any such criteria is evidence that none are possible. But this would be a hasty conclusion, for it is the purpose of this paper to suggest some. Before doing so, however, a look at the present state of the antitrust program and some typical suggestions for its improvement is in order.

II

It is a well-known fact that our antitrust situation is in an unimaginable muddle. It is not surprising that the vagueness of our laws has harvested a wilderness of mutually inconsistent court rulings, often arbitrary and unworkable official standards of business propriety, subsequent re-interpretation of these standards into legal oblivion, and their later resurrection in soul-satisfying bursts of judicial indignation. Professor Homan refers to the result of all this as a "tortuous course,"[2] and Stocking and Watkins, in their excellent volume, accuse the courts of "vacillation" and "zigzagging."[3] Specific evidence supporting these charges is too familiar to require repetition here. However, recent decisions in which

[1] Edward S. Mason, "Monopoly in Law and Economics," *Yale Law Review*, Nov. 1937, p. 47.

[2] Paul T. Homan, "Notes on the Antitrust Law Policy," *Quar. Jour. of Econ.*, Nov. 1939, LIV, reprinted in *Readings in the Social Control of Industry* (Philadelphia: Blakiston Co., 1942), edited by Edgar M. Hoover, Jr., and Joel Dean, p. 244.

[3] George W. Stocking and Myron W. Watkins (hereafter referred to as Stocking and Watkins), *Monopoly and Free Enterprise* (New York: Twentieth Century Fund, 1951), p. 276.

the courts have come to accept more nearly the economist's injunctions about the significance of imperfect competition raise the question of whether in their zeal to protect the free-market capitalist system from the alleged evils of some of its prominent practitioners they may not in the end destroy that system.

The latest Tobacco and Aluminum decisions are cases in point.[4] While on the one hand they may tend to remove the uncertainty of having to depend on the whims of judges about what constitutes "ruthless, predatory and immoral business tactics" by accepting the objective existence of nonaggressive oligopoly and market control as presumptive evidence of monopolization and even conspiracy, they have created the perhaps greater uncertainty of whether it is at all legal for such firms to engage in any further creative economic activity. Stocking and Watkins accept without alarm the fact that the Aluminum decision now makes it "illegal for a single seller to increase his investment so that he may continue to dominate the market."[5] They correctly note that this means that "retention of monopoly power by persistently expanding capacity to meet anticipated demand and to forestall potential competition violates the antitrust laws . . ."[6] and that "monopoly power need [now] not be abused to be unlawful."[7] In other words, the mere existence of criptomonopoly market control (and in the Aluminum case Judge Hand provided no standard by which to determine when it exists except to say that 64 per cent market control might not be enough[8]) is sufficient to indicate a violation of the laws. Efforts on the parts of large oligopolists to maintain their present shares of the market would certainly appear to be unlawful. In a word, strictly interpreted, it is illegal for oligopolists to do anything but lose part of their current market shares. The only action consistent with the new construction of the Sherman Act is inaction. And since in neither the Aluminum case nor the Tobacco case was there a demand for dissolution, divestiture, or divorcement, since there was no requirement for the atomization of the firms or the industries, we can only conclude that the new standard for the preservation of competition has the anomalous requirement that oligopolistic enterprises practice a policy of permitting themselves to wither on the vine, a policy of conscientious withdrawal from the competitive struggle.

Stocking and Watkins seem to accept this as the logical and indeed desirable consequence of the Tobacco and the Aluminum decisions. They recognize the fact that the new emphasis of power to assert control over price and output "ignores the significance of intent and thus would jeopardize a concern that through pioneering enterprise and outstanding efficiency might hold a large share of its market."[9] But they seem to give not another thought to the significance of that statement or to the many other debilitating ramifications of the

[4] American Tobacco Co., et. al. *v.* U. S., 328 U. S. 781 (1946), and U. S. *v.* Aluminum Company of America, 148 Fed. 2nd 416 (1945).

[5] Stocking and Watkins, *op. cit.*, p. 291.

[6] *Ibid.*, p. 290.

[7] *Idem.*

[8] U. S. *v.* Aluminum Company of America, 148 Fed. 2nd 424 (1945).

[9] Stocking and Watkins, *op. cit.*, p. 296.

decisions, saying only in defense that the new rulings "would have the salutary effect of facilitating dissolution of combines that dominate a whole branch of industry and of hindering the further concentration of economic power through mergers."[10] It would appear that the authors are anxious and willing to burn down a barn to roast a pig. Given the funds and no reversal of policy, we may expect many fires, as the Antitrust Division will undoubtedly go after the victims it singles out in its periodic reports and studies with an immense gusto.[11]

While many economists and lawyers are jubilant that "the courts have finally brought the law of conspiracy into harmony with the economics of oligopoly . . ."[12] that the courts have "finally interred and reversed the old dictum that mere size is no offense under the Sherman Act . . . ,"[13] that at last "painstaking search for scraps of evidence with a conspiratorial atmosphere are no longer necessary . . . ,"[14] they have neglected the fact that the new power of the antitrust agencies to compel dissolution, divestiture, divorcement, and the withdrawal of large firms from the competitive struggle, unrelated as that power is to any adequate consideration of the relative efficiency and creativeness of the firms involved, may so completely demoralize business leaders and fragment the industrial structure that it will destroy the very thing the antitrust policy seeks to preserve.

The uncertainty created in business circles is evident in the reactions to the Tobacco, Aluminum, and A & P decisions.[15] Nicholls quotes and sympathizes with counsel for the tobacco companies who said they were "entirely without

[10] *Idem.*

[11] As Professor Adelman has pointed out in this connection the Antitrust Division "stands today at the height of its power and prestige." (M. A. Adelman, "The A & P Case: A Study in Applied Economic Theory," *Quar. Jour. of Econ.*, May 1949, LXIII, p. 238.) Recognizing this, one commentator comes to what I believe to be the disturbing conclusion that there is now "at least a presumption in favor of the view that the Antitrust Division's ability to find and prosecute monopolies successfully is . . . largely limited only by the extent of its own resources in bringing cases to trial . . . ," saying further that "the Antitrust Division may be expected to use dissolution proceedings much more frequently in the future than it has previously done . . . ," and that "dissolution appears to be the only really effective remedy for oligopoly which lies within the limits of antitrust action per se." He goes so far as to make the absolute generalization that by the courts having apparently shifted attention from abuse of power to its mere existence they have made a change that "is *all* to the good." (William H. Nicholls, "The Tobacco Case of 1946," *Am. Ec. Rev.*, Proceedings, May 1949, XXXIX, pp. 287, 296. My italics.)

[12] *Ibid.*, 286.

[13] Walter Adams, "The Aluminum Case: Legal Victory—Economic Defeat," *Am. Ec. Rev.*, Dec. 1951, XLI, p. 917.

[14] Eugene V. Rostow, *A National Policy for the Oil Industry* (New Haven: Yale University Press, 1948), p. 137.

[15] U. S. *v.* The New York Great A & P Co., 67 Fed. Supp. 626 (1946). Appeal was upheld by the Seventh Circuit Court of Appeals in February 1949, after which the company decided not to appeal further. For approving comments on these decisions see Theodore J. Kreps in "The Effectiveness of the Federal Antitrust Laws: A Symposium," organized by Dexter M. Keezer, *Am. Ec. Rev.*, June 1949, XXXIX, p. 699; Stocking and Watkins, *op. cit.*, pp. 288–296; and Joel B. Dirlam and Alfred E. Kahn, "Antitrust Laws and the Big Buyer: Another Look at the A & P Case," *Jour. of Pol. Econ.*, April 1952, LX, pp. 118–132.

guide as to how they may lawfully avoid the creation of evidence of future Sherman Act violations against themselves, unless they cease business altogether."[16] Neither the courts nor the prosecution gave them guidance, leaving the companies to operate in an atmosphere of uncertainty as to how legally to engage in the practices necessary for their preservation. For all practical purposes the same is true of the Aluminum decision.

The implications of the A & P decision are equally foreboding. As Professor Adelman has pointed out, the new prescriptions seem to be that "A firm should not cut prices in the hope of attracting more business. . . . A retailer ought not to wholesale or to manufacture, for efficient operation in these fields would give him an advantage over his rivals which it is 'unfair' to seek. But there is no objection to his doing an inefficient job and gaining no advantage. . . . To spread lower prices throughout the market, or to obtain lower prices . . . are disapproved . . . ; systematic discrimination designed to suppress more efficient distributive methods and the more active price competition which they set off—this kind of discrimination is not only approved but required."[17]

What is to become of American capitalism under this Walpurgian law? It is unfortunate that whenever anyone sounds the tocsin of sense about the nature of modern industrial society, whenever anyone sympathizes with the problems of big business, he risks being accused as a partisan of power and privilege. In some circles it is downright un-American to question the wisdom and techniques of recent antitrust policies and of canonizing the antitrust ideology as it is embodied in the Sherman Act and its patchwork progeny, the Clayton Act. But more than one highly respected economist has had a good word to say for bigness and oligopoly.[18] Still we are now in the most serious danger in the history

[16] William H. Nicholls, *loc. cit.*, p. 288.

[17] M. A. Adelman, *loc. cit.*, pp. 255-6.

[18] Professor Joseph A. Schumpeter said, for example, that "What we have got to accept is that the [large-scale establishment or unit of control] has come to be the most powerful engine of . . . progress and in particular of the long-run expansion of total output not only in spite of, but to a considerable extent through, [the] strategy which looks so restrictive when viewed in the individual case and from the individual point of time. In this respect, perfect competition is not only impossible but inferior, and has no title to being set up as a model of ideal efficiency." *Capitalism, Socialism, and Democracy* (New York: Harper & Bros., 1947, 2nd ed.), p. 106. David McCord Wright has pointed out that "However paradoxical it may sound to say so, much modern so-called monopoly is motivated not by greed but by the same static instinct of workmanship which also animates the disciples of Thorstein Veblen," and that "Whenever it is proposed to decentralize an industry by antitrust action, the cry is always raised that decentralization will lead to cutthroat competition. . . ." No "defense of the competitive order which overlooks this problem can have any real validity." *Capitalism* (New York: McGraw-Hill Book Co., 1951), pp. 173 and 171. J. K. Galbraith, while then on the whole highly sympathetic to antitrusting, said that "It is not true that monopoly or oligopoly always breeds senescence and protection of the *status quo*, and the reverse may often be the case. The monopolistic or oligopolistic firm is likely to spend more money for research, if for no other reason than because it is likely to have more to spend. In addition, because the firm is large in relation to the total industry, its share in the market for (say) a new product will remain considerable even though the innovation is appropriated by the industry at large and there is more than a chance that

of American capitalism of throwing the baby out with the bath, of eliminating bigness ruthlessly and indiscriminately without regard to its beneficence and the social and economic value of holding out the promise of big rewards. If we are to outlaw indiscriminately anyone's winning the competition, even temporarily, we will destroy the only thing that makes competition possible and desirable—namely, relatively free reign for the audacious imagination to exercise itself in a struggle for economic gain, gain that may ultimately benefit the whole society. As the laws are now interpreted, antitrust prosecutions can limit themselves to attacks on size and market control only without the necessity of considering how establishments got that way, how they are behaving, or whether they are efficient and creative. Taking the new standards at their face value, they seem to suggest that it is time, as Professor Adelman has interpreted them, to abandon the use of the yardstick in measuring antitrust violations and begin swinging a club.[19]

III

Before we start swinging, however, we had better develop more objective and consistent criteria of what should and should not be allowable in the way of business size and practices. Everyone who has concerned himself with the monopoly problem seems to have made suggestions in the form of alternatives to or supposed improvements on the antitrust laws. The suggestions calling for more vigorous enforcement of the laws are too numerous to cite. Typical, and certainly among the most comprehensive of these, is the suggested "Program to Promote Competition" which the Committee on Cartels and Monopoly of the Twentieth Century Fund recently proposed.[20] These and other conventional suggestions boil down to something like this: clarification of the nature of offenses, establishment of necessary intelligence services for discovering offenses, the creating of effective and adequate means of proceeding against offenses, the creation of an adequate supervisory establishment to follow up and enforce disciplinary actions, a more definite policy on bigness, rules governing activities of business groups like trade associations, "restoration" of the investigatory functions of FTC, establishment of effective liaison between FTC and the Department of Justice, and greatly increased budgetary support of both agencies.[21] Further, there is a demand for changing certain government practices and policies which contribute toward monopoly. These include buying practices, tariff and tax policies, conservation policies (particularly in oil, iron, and non-ferrous metals), agricultural policy, labor policy, incorporation laws, retail price main-

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the benefits from cost reduction, though similarly generalized, will be perpetuated in the new oligopolistic equilibrium. None of these conditions hold under conditions approaching pure competition." "Monopoly and the Concentration of Economic Power," in *A Survey of Contemporary Economics* (Philadelphia: Blakiston Co., 1948), edited by Howard S. Ellis, pp. 119–120.

[19] M. A. Adelman, *loc. cit.*, p. 256.

[20] The report is included as Chapter 16 in Stocking and Watkins, *op. cit.*

[21] Paul T. Homan, *loc. cit.*, pp. 240–4.

tenance, patent policies, etc. Attention is also called to continued existence of interlocking directorates, intercorporate stockholdings, intercorporate asset holding, the practices of having common agencies render financial, legal, engineering, and accounting services to competing firms in the same industry, price leadership, and the real nature of f.o.b. pricing.[32]

The House Subcommittee on the Study of Monopoly Power has summarized the suggestions made to it by various economists in connection with its recent investigation of the steel industry. Several excerpts from this summary will help show further, in somewhat truncated fashion, some of the typical types of anti-monopoly programs being suggested today:[33]

> Professor Arthur Burns proposed (1) the elimination of specific practices—a policy which he believed could be helpful but which requires continuous surveillance of the industry and is handicapped by the slowness of legal processes; (2) regulation of prices and investment—a policy he thought would be difficult to apply to the steel industry, and again, requires continuous Government action; and (3) decentralization of control over industry—to Burns this appeared to be the most promising policy; it would involve replacing the larger companies with a number of smaller ones, each operating a mill that is fairly well integrated; this policy would require less continuous intervention by Government. . . . George Stigler at the outset of his testimony suggests three general types of policy which could be employed to reduce or control the monopolistic elements in the organization of the steel industry, namely: (1) to continue the traditional antitrust policy of seeking to uncover, prosecute, and eliminate specific abuses such as the basing point system; (2) to accept the present company structure of the industry, and subject the industry to continuous supervision and regulation to prevent abuse of monopoly powers; and (3) to change the company structure of the industry—that is, dissolve the biggest companies into numerous independent companies—to increase the competitive force in the industry. Of these Stigler considers the third superior in every important respect.
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> . . . With specific reference to the strengthening of antitrust legislation Professor Stigler recommends the following: (1) On the preventive side, we should prohibit the formation of oligopolies by mergers of competitive firms; (2) on the corrective side, we should make dissolution the normal method of eliminating restrictive practices in oligopolistic industries; (3) we should formulate our antitrust policy with respect to the typical oligopolistic structures, in which the leading companies are the product of mergers and usually possess several plants, so that dissolution would require no change in production methods; (the gradual dissolution of monopolistic and oligopolistic industries would not turn the economy upside down; if we should eliminate important oligopolies which have so far accumulated, monopoly would become a minor problem in the American economy); (4) we must recognize that this steel industry is no longer a very private industry; it must defend every price increase in Congress; it must have a Presidential board in labor disputes; it has recently been threatened with governmental steel plants and public utility status;

[32] *Cf.*, for example, among many, all of the references cited above, and Alfred E. Kahn, "Deficiencies of American Patent Law," *Am. Ec. Rev.*, Sept. 1950, XL, pp. 478–82; Jesse W. Markham, "The Nature and Significance of Price Leadership," *ibid.*, Dec. 1951, XLI, pp. 891–905; and Corwin D. Edwards, *Maintaining Competition* (New York: McGraw-Hill Book Co., 1949).

[33] *The Iron and Steel Industry*, Report of the Subcommittee on Monopoly Power of the Committee on the Judiciary, U. S. House of Representatives, 1950, pp. 88–89.

thus to foster the Nation's interest in a strong, independent system of private enterprise, a certain sporadic public supervision may be required.[24]

In summarizing Professor Stocking's recommendations, the Subcommittee reproduced his proposed drafts for a preamble to the Sherman Act and for an amendment to the Clayton Act. They read, respectively, as follows:[25]

It is the policy of the Congress of the United States to encourage an effectively competitive economy. This policy is designed to insure as many sellers in interstate markets as is consistent with the economies of mass production. It is not intended to prevent growth through efficiency, but to prevent the accumulation of market power particularly through the merger of business rivals, the preemption of the supply of limited natural resources, the abuse of patent privileges, and to prevent any and all restrictive agreements among business rivals. It is aimed at power over the market, not economic efficiency.

Any corporation whose size and power are such as to substantially lessen competition or tend to create a monopoly in any line of commerce in any section of the country shall be dissolved into a number of independent enterprises sufficient to restore competition in such line of commerce, provided that no action under this section shall be taken if the corporation proceeded against can demonstrate that the proposed action would materially lessen efficiency in any line of commerce.

Professor Rostow echoes the concern over the size of the business unit by saying that:[26]

If the offense is monopoly power in its general sense of market control, or ability to influence price, and if the most important condition of monopoly is size—size, that is, in relation to the relevant complex of market institutions—then the only punishment which fits the crime is directly to reduce the monopolistic size of the business units which have monopolistic power.

These suggestions are in many ways oriented in the right way to the right problems. But in every case, irrespective of what course of action is proposed, there is a notable dearth of specific point-by-point criteria for determining when the antitrust authorities should take what action. We are always advised that whatever action is taken, must be "economically defensible." Exactly what this means is seldom clarified. Instead of specific criteria we are treated to an intensification of the verbal assault on the problem. When the technical difficulties of such alleged remedies as dissolution and reducement are thought through,

[24] [My note.] It is interesting to note that in suggesting that Steel must defend every price increase in Congress, Professor Stigler is not violating a principle which can these days be regarded as a basic right of private business in the American economy. For example, we saw several years ago the interesting spectacle of the late Senator Robert A. Taft sitting across the table from the president of the U. S. Steel Corporation in a Senate hearing room and angrily questioning his company's right to increase prices. (I am indebted to Professor H. Gordon Hayes of Tulane University for pointing this interesting turn of events out to me.)

[25] *The Iron and Steel Industry*, *op. cit.*, p. 89.

[26] Eugene V. Rostow, "The New Sherman Act: A Positive Instrument of Progress," *University of Chicago Law Review*, June 1947, XIV, p. 589.

however, some advocates may wish to take refuge with Professor Clark in the more cautious position that "the attack on size is best limited to growth by merger"[27] and let it go at that.

For those who persist in advocating the more aggressive policies, the first question is whether it is at all possible to devise a really adequate test to prove or suggest which so-called "undesirable" oligopolists and semi-monopolists should be dissolved. First of all, the economist's efficiency standard does not provide an adequate or even useful test of the total efficiency of the oligopolist. For one thing, it cannot be applied effectively because of the difficulty of allocating costs under joint cost production. Furthermore, it provides no way of measuring the economic and social beneficence of research and development expenditures, and it cannot adequately evaluate advertising and public relations expenditures. Since even highly competitive firms encounter such expenditures, these cannot be disallowed in oligopoly. And if they cannot be disallowed their worth must be measured. But how?

Then there are the innumerable secondary technical difficulties arising out of dissolution itself. For example, Stocking and Watkins show that while it might be a relatively simple engineering and even financial matter to dissolve the American Can Company, which in 1946 had 58 can factories and eight machine shops, the courts would find themselves having to dissolve the Continental Can Company as well because the American Can dissolution would leave Continental an industry giant and near monopolist.[28] Furthermore, there is the complex question of what should be done with the research facilities of the dissolved company. None of the newly created companies would be able to finance the operation of the already established research facilities, yet each would want them in its company. The same problem arises with the advertising department and the integrated marketing organization of the old company. But in spite of these difficulties one commentator who has studied dissolution in action contends that the problems "are not insuperable," particularly if the job of ordering and supervising such dissolution is taken out of judicial hands and placed in administrative hands.[29] But he leaves unresolved the important problems noted above, and he provides no standards showing when dissolution is appropriate. Another commentator points with hope to the "success" of dissolutions and divestitures under the Holding Company Act. But he gives no evidence to suggest that there have been equally successful results in less notorious cases of outright primitivism and particularly in manufacturing where the problems are likely to be more complex.[30]

[27] J. M. Clark, "The Orientation of Antitrust Policy," *Am. Ec. Rev.*, Proceedings, May 1950, XL, p. 97.

[28] Stocking and Watkins, *op. cit.*, pp. 181–2.

[29] George Ellery Hale, "Trust Dissolution: 'Atomizing' Business Units of Monopolistic Size," *Columbia Law Review*, April 1940, XL, esp. pp. 631–2. The same suggestion to put the job into administrative hands is implied in Mr. Justice Roberts' decision in Associated Press *v.* U. S. 326 U. S. 1, 47 (1945).

[30] Walter Adams, "The Dilemma of Antitrust Aims: Reply," *Am. Ec. Rev.*, Dec. 1952, XLII, pp. 898–9.

The difficulties of doing what has been so often proposed—namely, the more rigorous application of the antitrust laws and the more frequent use of divorcement, dissolution, and divestiture decrees—has driven some people to conclude that trust busting is futile. One commentator concludes as follows:[31]

> In general the central area of the contemporary American economy is one in which competition is not technologically feasible, because there is room for only a few industrial units which cannot operate on a competitive basis. This central region of monopolistic activity may be described as an area of large scale economic enterprise in which collective action in control of individual action is the rule rather than the exception.

Those who find no better refutation or who refuse to take time for a more searching counterattack often dismiss such statements as collectivistic propaganda in search of new arguments with which to sell socialism.[32] While this retort is not entirely unwarranted, it does a blatant injustice to much honest scholarship that has come to this conclusion. It comes close to saying that the successful big business manager who defends bigness on technological grounds is a "great" American while the critical economist who explains bigness on the same grounds is an insidious peddler of socialism.

Another view on the alleged futility of antitrusting holds that everybody seems to admire bigness, that the big corporations don't want to be broken up, and they say so when making their indirect contributions to both large political parties. Besides, it is held, they really are not behaving like grasping moneybags but rather in the best traditions of Rotary and Christian cooperation.[33]

The point of all this seems to be that there are real difficulties to the implementation of the antitrust proposals that are typically made today, difficulties that are both economic and political in nature. Faced with these problems and the prospect of a weighty bureaucracy that would be needed to make the antitrust laws effective, one authority has indicated that we may have to settle for the status quo, saying that "An act which would keep concentration from becoming more excessive and yet not make for more competition might be much more compatible with democracy than a measure creating some control over industry."[34]

If, however, the antitrust program as now broadly conceived is to be really effective, there must be reliable standards on the basis of which to implement whatever remedial powers it includes. As Professor Mason has said, if economists are going to make any useful contribution in the antitrust field, they "must conceive the monopoly problem in a more extensive way than is at present custom-

[31] Allen G. Gruchy, *Modern Economic Thought: The American Contribution* (New York: Prentice-Hall Co., 1947), p. 566.

[32] *Cf.* David McCord Wright, *op. cit.*, pp. 176–77, and his *Democracy and Progress* (New York: Macmillan Co., 1948), pp. 104, 116. Also Stocking and Watkins, *op. cit.*, pp. 280–84.

[33] John Ise, "The Futility of Trust Busting," *Am. Ec. Rev.*, Proceedings, May 1948, XXXVIII, pp. 488–501.

[34] Edward H. Levi, "The Antitrust Laws and Monopoly," *University of Chicago Law Review*, Feb. 1947, XIV, p. 181.

ary." It is not sufficient "to conduct purely analytical and descriptive studies of various types of control situations." Economists are imposed with the "necessity of elaborating tests which can be applied by administrative bodies and by courts."[35]

IV

Aside from their attacks on conspiracy, collusion, and other types of clearly predatory business practices, economists have generally suggested four economic tests of monopoly. These relate to market control, freedom of entry, price behavior, and efficiency as related to size. Let us examine each of these.

Market control has always been an ambiguous standard. The Supreme Court has vascillated to the extent of in some cases considering control of local markets as violating the law, and in other cases national markets.[36] These are not mutually exclusive standards, but as a practical test they have been confusing. Then there is the fact that while a firm may have eighty per cent of the market in one industry it may be in immediate and constant competition with producers of close substitutes. In such a case, should market control in the first industry be subject to antitrust review? And what about such control due to the implementation of new inventions? Can our desire for economic development afford to threaten the prospect of possible monopoly profits resulting from getting a head start on possible competitors? Furthermore, does the market control criterion consider the economic benefits of size and economic power? Invention is no longer the product of the independent artisan or genius working in lonely isolation. It is a group process undertaken where funds are ample and exploited where the great risks involved are relatively easy to bear for a large undertaker. The great spurts of economic development and most of the great new inventions and processes that we have seen in recent years came not from our most competitive but from our more monopolistic industries where control of the market is lodged in a few firms. Only the most myopic preoccupation with the short run would sacrifice a consideration of the possible benefits of bigness to the Procrustean standard of market control in developing antitrust policy.

On the question of whether bigness impedes freedom of entry to the industry, the last word has not been said. We have recent evidence that in many cases—for example, aluminum, chemicals and plastics, railroad equipment, road construction machinery, electronics—entry is frequently promoted by bigness. Large firms regularly diversify their operations by entering other industries frequently being accused of oligopoly or monopolistic competition. In that sense they provide rather than impede entry. Furthermore, even if greater ease of entry were possible, as in certain consumer service industries, this often leads to greater economic instability and perhaps more waste than is alleged under conditions where entry is more difficult. There is nothing particularly beneficial

[35] Edward S. Mason, "Monopoly in Law and Economics," *loc. cit.*, p. 49. Italics added.

[36] In the Checker Cab Case (U. S. v. Yellow Cab Co., 332 U. S. 218 [1947]) the Court used the market control criterion to suggest monopoly on a local basis. In the Aluminum case it used a national (indeed, international) basis.

about hundreds of grocery stores, lunch counters, and dry cleaning establishments going bankrupt every year or continuing to operate at rates of return that exploit their owners and operators. Moreover, our most competitive industries are seldom the ones that provide the new labor-saving, cost-reducing, or efficiency-promoting devices that characterize economic progress. Industries known for great ease of entry are not generally known for their creative impulse. The most beneficial deeds of economic and technical innovation have emanated from industries where entry is known to be more difficult. No discussion of the entry criterion is complete unless these points are recognized and evaluated. And finally, there is the problem of time. After how many years of alleged impediments to entry does this become grounds for antitrust action? Would whatever criterion is employed also apply to declining industries? How do we know an industry is in fact declining and how do we know that a new industry is not destined for early obsolescence? Indeed, when is an industry an industry?

Professor Viner contends that the best single test of the competitive character of an industry is that prices "are quickly responsive to changes in market conditions."[37] Vigorous use of this "price behavior" criterion by the antitrust authorities would require the pulverization of nearly all of American business. Price sluggishness is the norm in our economy. Clearly more elaborate price criteria would need to be adopted. In 1937 Arthur R. Burns said what still applies: the FTC "has made little progress in establishing criteria of fairness in price policies."[38] The Supreme Court has not helped matters. In 1927 it held that "The power to fix prices, whether reasonably exercised or not, involves power to control the market and to fix arbitrary and unreasonable prices."[39] But in the recent Tobacco and Aluminum decisions it employed a reverse logic to reach the same conclusion. Thus by looking at market control the court inferred power to fix prices and the existence of Sherman Act violations. Whatever the origin of the Court's economic theory, to the extent that its consideration of price inflexibility has involved it in the question of the highly prevalent practice of price leadership, the theory on which the above conclusion is based cannot have come from a full consideration of the possibilities cited by the modern economist. He argues with equal vigor that price leadership implies both deliberate collaboration[40] and the normal non-collusive consequence of competitive oligopoly.[41] More fre-

[37] Jacob Viner, "Objective Tests of Competitive Price Applied to the Cement Industry," *Jour. of Pol. Econ.*, Feb. 1925, XXXIII, p. 108.

[38] Arthur R. Burns, "The Anti-trust Laws and the Regulation of Price Competition," *Law and Contemporary Problems*, June 1937, p. 4, reprinted in *Readings in the Social Control of Industry*, *op. cit.*, p. 187.

[39] U. S. *v.* Trenton Potteries Co., 273 U. S. 397 (1927).

[40] *Cf.*, for example, Arthur R. Burns, *The Decline of Competition* (New York: McGraw-Hill Book Co., 1936), p. 76ff, and David Lynch, *The Concentration of Economic Power* (New York: Columbia University Press, 1946), p. 176.

[41] *Cf.*, for example, Milton Handler, *A Study of the Concentration and Enforcement of Federal Antitrust Laws* (Washington: TNEC Monograph No. 38, 1941), pp. 40–1, and Jesse W. Markham, "The Nature and Significance of Price Leadership," *Am. Ec. Rev.*, Dec. 1951, XLI, pp. 891–905.

quently he relies for his explanations on two varieties of non-collusive price leadership, that of the dominant firm industry and that of the barometric firm industry, in both of which cases normal maximizing assumptions and supply and demand forces are agreed to be thoroughly operative.[42] Again we are compelled to recognize the extreme limitations of a frequently-suggested criterion. Standing alone it does not appear particularly useful. In combination with other criteria it would have to be compromised and diluted until it would cease to be a criterion to which business and industry could look as some sort of predictable standard on the basis of which appropriate policies might be made.

The relation between size and efficiency is of course the most sensible economic criterion that can be employed in antitrust proceedings. Bigness is generally defended because of its allegedly greater operating efficiency. On this score, however, there is little agreement. Even where profit studies indicate medium-sized firms of the $100,000–$250,000 asset size class to have the optimum and most stable average rates of return[43] and where cost studies often indicate the larger firms to have no particular advantage over the medium-sized firms, for many students the results have been "inconclusive and contradictory."[44] One of the most recent investigators concludes that "We simply have no reliable evidence" that large corporations are less efficient than smaller ones, or vice versa. We don't know either way.[45] For one thing, the technical problems of making such studies are virtually insuperable. In cost studies the most perplexing problem is the allocation of costs under conditions of joint cost production. In many cases not even the producers are able to make reliable allocations. Beyond all this, however, the business standard of efficiency may legitimately vary from the economist's standard. For the former efficiency includes safeguarding the investment against the vagaries of an unstable economy, "even at the price of loss of potential increments of income."[46] A. D. H. Kaplan has pointed out in this connection, for example, that it may be true that "lowest operating costs for an industry are frequently attained by an intermediate-size firm rather than by the largest firm in the industry. But as size increases, the effectiveness of the 'product mix', dealer organization, and other factors that serve to determine the over-all

[42] *Cf.* George J. Stigler, "The Kinky Oligopoly Demand Curve and Rigid Prices," *Jour. of Pol. Econ.*, Oct. 1947, LV, pp. 432–49.

[43] Federal Trade Commission, *Relative Efficiency of Large, Medium-Sized, and Small Business* (Washington: TNEC Monograph No. 13, 1941), p. 14, and Joseph L. McConnel, "Corporate Earnings by Size of Firm," *Survey of Current Business*, May 1945, and "1942 Profits by Size of Firm," in *ibid.*, Jan. 1946. Also Sidney S. Alexander, "The Effect of Size of Manufacturing Corporation on the Distribution of the Rate of Return," *Rev. of Econ. and Stat.*, Aug. 1949, XXI, pp. 229–235. There are many other similar studies, many of them in answer to and severely critical of the FTC monograph cited in this footnote.

[44] W. L. Crum, *Corporate Size and Earning Power* (Cambridge: Harvard University Press, 1939), p. 230.

[45] M. A. Adelman, "Effective Competition and the Antitrust Laws," *Harvard Law Review*, Sept. 1948, LXI, p. 1291.

[46] Karl Kaysen, "A Dynamic Aspect of the Monopoly Problem," *Rev. of Econ. and Stat.*, May 1949, XXXI, p. 110.

stability of the profit mix may be more relevant than specific unit costs to a realistic efficiency scoring of the company as a going concern with a record of consistent profits. It is here that the advantages of scale may become decisive."[47] When it comes to these considerations, it is legitimate to ask whether the economist's efficiency standard is entirely appropriate. To be sure it is not inappropriate, but where the exigencies of uncertainty, risk, and dynamic growth are involved, the system of short-run and partial equilibrium analysis becomes a notoriously weak basis for recommending policy.

The trouble with public policy in the past has been its one-sided and narrow focus on getting dramatic results, rather than on devising standards which make the results consistent with one of the necessary over-all aims of antitrusting—improving the environment for economic opportunity and growth. Thus while the Aluminum and the Tobacco decisions seek to protect the public and promote economic progress by inveighing against bigness, they establish a doctrine which is in serious danger of undermining the motives and destroying the incentives that create economic progress and benefit the public. As was pointed out above, some observers think that modern technology makes bigness so inevitable that atomization may seriously retard economic progress. As a consequence it has been suggested that "where it is impossible to create conditions such that monopolistic competition will function satisfactorily, government competition if carried out according to proper principles may be better than government regulation."[48] Another view advocates extension of the public utility category to include a wide range of necessary monopolies, saying that they should be "socially controlled, excluded from capitalist motivations, detached from all concern with book profits, and ultimately destined for public ownership."[49] But the questions that remain are these: what is a "necessary monopoly," when is monopolistic competition not functioning "satisfactorily," and what are the "proper principles" under which government-owned plants would be operated, especially if they are not to be concerned with "book profits" or other "capitalist" motivations?

None of the standards for identifying monopolistic restrictionism that have been reviewed above provides an unambiguous test. If they should be applied they would be as much subject to the whims and ideologies of the prosecutors and the judges as are less elegantly elaborated standards. Uncertain and ambiguous standards in the hands of a powerful government are dangerous, particularly when they are administered by zealous do-gooders whose sometimes irrational passion for equity and justice endangers precisely what they seek to promote and preserve. What is needed, aside from a good deal of patent law

[47] A. D. H. Kaplan, "The Influence of Size of Firms on the Functioning of the Economy," *Am. Ec. Rev.*, Proceedings, April 1950, XL, p. 76.

[48] Donald H. Wallace, "Monopolistic Competition and Public Policy," *Am. Ec. Rev.*, Proceedings, March 1936, XXVI, reprinted in *Readings in the Social Control of Industry*, *op. cit.*, p. 277.

[49] David Cushman Coyle, "Social Control of Production," *Annals of the American Academy of Political and Social Sciences*, Nov. 1939, Vol. 206, p. 125.

reform and assiduous policing to prevent and to prosecute clearly coercive and predatory practices, is an easily administered unambiguous objective test which shows whether by reasonable economic standards the giant firm is in fact the optimum-sized firm, whether its size is justified by the economics of large scale production, and whether the public receives the full price benefits of its alleged efficiency.

V

I propose two complementary programs for improving our handling of the monopoly problem. With respect to bigness and the question of whether consumers are getting their money's worth when buying from big sellers, I propose the establishment of either government-owned and operated pilot plants or government-financed and privately-owned and operated pilot plants.[60] With respect to antisocial and collusive business practices and maneuvers, I propose some sort of public representation in the managements of our large corporations.[61] I do not propose that our big firms be considered public utilities and thus subject to conventional public utility regulation, and I do not propose the socialization, or even partial socialization, of the economy or socializing the management of privately-owned enterprise. I do propose a clear-cut price test of the performance of big business and a method of effectively discovering and halting predatory practices.

(a) *The pilot plant program.* In rough outline, the pilot plant program might be established and operated in the following manner. In a few of the basic industries, such as steel, aluminum, cement, industrial chemicals, and machinery, for example, and in a few big-producer fabricating industries such as pharmaceuticals, electrical appliances, and perhaps automobiles, the government would establish and perhaps operate pilot plants. In the case of new industries or new fabrications no pilot plant would be established during at least their first fifteen years. Patent law reform would give exclusive patent rights for five years only, to that extent legalizing any monopoly profits that might result in the meanwhile and at the same time retaining the lure of substantial rewards for new developments. The short exclusive patent period would help to promote the rapid exploitation of new devices and ideas. The law might provide that the patent be made available for licensing at reasonable rates after the fifth year and that it

[60] A casual reference to such an arrangement is made by David McCord Wright in *Democracy and Progress, op. cit.*, pp. 127-8. The late Lewis Corey made a similar and much more comprehensive suggestion in his *Meat and Man: A Study of Monopoly, Unionism, and Food Policy* (New York: Viking Press, 1950), pp. 234-42.

[61] I am familiar with two suggestions that, while not quite approximating the present one, bear on it. See Wiley B. Rutledge, Jr., "Significant Trends in Modern Incorporation Statutes," *Washington University Law Quarterly*, April 1937, XXII, pp. 305-343, where he suggested the expansion of stockholders' "visitorial power" to permit them to see what goes on inside the corporations in which they own shares. Also Harold D. Laswell, "A Non-Bureaucratic Alternative to Minority Stockholder Suits," *Columbia Law Review*, Nov. 1943, XLIII, pp. 1036-40, suggesting the establishment of a public fact gathering agency to which corporations would be more-or-less compelled to furnish information which would be available for examination by anyone upon request.

become free public property after the tenth year. Then pilot plants could legally be established after the fifteenth year if they were found desirable by the authorities.

The pilot plants would, wherever possible, be single-product plants and be of such appropriate size that they operate in the strictest possible fashion according to the academic economist's model of optimum output at which price equals marginal cost, marginal revenue, average revenue, and minimum total average unit cost.[53] Conventional canons of financing would be adhered to. Advertising would be permitted (in spite of the contradiction of the economist's model) but be limited to strict product education and price information. Although producing only a single product, each plant would produce several lines so as to satisfy different tastes with respect to quality and fanciness. While the total output of each plant would be small compared to the output of the industry, a practical, objective comparison of prices would be available to the public, especially in view of the great publicity pilot operations would probably receive in the press. The cost experience and price behavior of these plants would be available to the Antitrust Division and to the courts as an objective basis of comparison, thus providing an unambiguous comparison of the relative efficiency of the multiple product private firm. Failure on the part of private producers to reduce their prices to the pilot plant levels (assuming that the latter prices are lower) would put the spotlight of conspiracy and inefficiency on the private companies. This would be cause for antitrust action.

To the extent that the private companies would claim that pilot plant prices are artificially low because of the alleged use of tax money in support of pilot operations, that argument would have to be refuted beyond a basis for doubt. Private organizations such as the Committee for Economic Development might be asked to participate in the administration of the program, and private management consulting firms and certified public accounting firms might be hired to assure the public that no such hidden subsidies exist. Private multi-product companies would have to be watched to see that they do not increase some of their prices so as to offset the lower prices of the products that would compete with pilot plant products. To the extent that private companies argue that their higher prices are offset by lower prices on other things they produce jointly or as "by-products" but which are not produced by the pilot plants, the government might be compelled to expand its pilot operations to such products. The government might avoid having to do this, however, if it can demonstrate that these

[53] With a sloped demand curve it is not possible to have the maximizing price equal at once to average and marginal cost and average and marginal revenue (in the long run). What would be required is strict accounting so that cost information is sufficiently refined to enable production at the point of intersection of marginal cost and marginal revenue. This of course raises the question of what are legitimate costs and what are illegitimate costs. Whether costs should include normal profits would undoubtedly be one of the first questions asked. It is probably unlikely that this item could or should be excluded from costs entirely. For the rest of the problems of attempting to operate according to the economist's orthodox criteria of efficiency, even if it is technically impossible to achieve the ideal, the nearest approximation to it should be vigorously sought in all pilot operations.

products are being produced elsewhere at costs equal to or less than they are produced under multi-product conditions. If the government cannot demonstrate that lower prices are possible by either test, then the multi-product firms win their case, at least insofar as it applies to the specific situation complained of.

There is the question, of course, of whether there will be sufficient demand to absorb the additional capacity created by the government plants. In a growing economy we can assume that there will, although it must be admitted that this is a big assumption the technical ins and outs of which cannot be discussed here. At the moment we are interested only in explaining in broad outline the nature of the program, confident of its practicality but not oblivious to its many difficulties.

With respect to complaints of socialism that will surely be forthcoming, there is perhaps a more palatable workable alternative to government ownership of the pilot plants. That is private ownership, with certain restrictions. The plants might be operated privately in exactly the manner described above under government ownership but financed and supervised by government. This is probably preferable to outright government ownership and operation, particularly since it would permit the payment of relatively high salaries, something that might meet with considerable public resistance if the operating executives were government employees. The pilot plants need not be new plants. They might very well be plants already operating but facing financial difficulties. The government would offer to help modernize them by underwriting necessary expansion and financing. Once this is accomplished, the plants would have to function according to the standards suggested above. Further necessary expansion would have to be financed by conventional business methods. In the event adequate funds are not available through conventional sources, a special government lending agency might make funds available at the prevailing rates. If a pilot plant cannot keep its prices at least as low as those prevailing in the industry, and if it cannot earn reasonable profits, the assumption would be that the industrial giants are indeed socially and economically more beneficial.

Another possible way of establishing the pilot plants would be for the government simply to advertise its intention of creating them and ask for bids by private companies or individuals to own and operate them. It is not inconceivable that many a corporate executive would welcome the opportunity of going on his own, of buying part of the plant, managing it, and gradually buying the government out, with the stipulation that the plant continue to operate according to the economist's model, even after it is totally owned by the operator, at least for a given length of time.

A major difficulty is that the pilot plants would not likely be in a position to engage in the extensive research and development that many of our oligopolists now do. Since research is the keystone of much economic progress, it would perhaps be necessary to increase pilot-plant prices by a percentage that approximates that now put aside by the oligopolists for research. Each pilot plant would use resulting revenues for research. Even so, the total research funds thus established might, in view of the smaller size of the pilot establishments, be consid-

erably less than is available to the oilgopolists. This disadvantage might be overcome by the pilot plants pooling their research funds or by the establishment of a national research organization financed by pilot plant funds and whose discoveries would be available to all comers for a nominal charge. Still, however, there remains the consideration that in breaking up large firms whose prices might be higher than those the pilot plants suggest they should be, we may be depriving ourselves of new technological developments that only large firms can undertake. But since we would include in the cost structures of the pilot plants research and development expenditures which approximate the average put aside by the large producers in the respective industries, there is no reason why the oligopolists' prices should be any higher than those of the pilot plants, unless they are simply less efficient.

With respect to the extensiveness of pilot plant operations, it would probably not be necessary to establish them in very many industries. Some industries appear to be sufficiently competitive and atomistic. For those that are not and in which no pilot operations are undertaken, the prospect of the possible establishment of pilot plants would very likely result in more cautious pricing by the members of these industries. This would possibly achieve at least the price goal (if not the atomization goal) of the program.

(b) *The public representation program.* With respect to public representation in the offices of private corporations, the following might be the general outline of such an arrangement. The American Economic Association, the National Bureau of Economic Research, or some other equally respected and detached organization, might be delegated to select competent economists who would have an office and possibly a very small staff within the executive offices of all large corporations. These observers would be paid out of a fund made available by the federal government. They would attend all high-level corporate conferences and boards of directors meetings for the purpose of observing their practices and plans. They might make cost studies and write articles on the problems of corporate management, particularly as these problems are related to the economy as a whole. These would be published (anonymously, so as not to reveal to any one firm the problems of its competitors) to help educate economists, businessmen, lawmakers, and government administrators about the problems, motives, and needs of corporate affairs. These observers would neither advise nor warn corporate managers about the desirability or legality of their actions. But they would keep our antitrust agencies informed about such activities of the corporations as appear to be in the penumbra of legality or illegality. The antitrust officials might then advise or warn the corporations about whatever activities they think are not strictly permissible. In that way the antitrust agencies would be well informed about what happens inside corporations and the corporations would have a reasonable basis for believing that should they be engaging in illegal activities they will be warned quickly and without unfavorable publicity. If, after being warned, they persist, then they invite the expense, embarrassment, and harassment of antitrust action. The public at the same time would have more confidence that it is not getting a raw deal from some large producer. At the same

time the government's briefs in most antitrust cases would avoid being based on conjecture or fragmentary and inconclusive evidence. They would include the inside facts as gathered by the public representatives. The representatives would be rotated to different companies from time to time so as to prevent corruption and their possibly becoming insensitive to the existence of questionable practices.

Whether or not particular practices are questionable would have to be decided by periodic policy reviews undertaken by the antitrust authorities in consultation with the public representatives, business leaders, consumer and labor representatives, and members of Congress. Jointly they might draft amending legislation relating to particular kinds of practices. Should a company be charged with restrictive and unlawful activities, particularly under such provisions as are now included in the Clayton Act, the testimony of the public representatives and possibly of a committee of academic economists appearing as the court's own expert witnesses might be required in every such case. The expert witnesses would be called by the court but might be selected jointly by the litigants from a list suggested by the American Economic Association. Such procedure would be in line with similar procedure suggested by the National Conference of Commissioners on Uniform State Laws for improving evidence in civil and criminal cases.[63] The procedure would tend to take the "trick" out of antitrust cases in which juries and judges are now compelled to make decisions based on conflicting evidence presented by supposedly equally well qualified experts who have been hired to present specific points of view by the opposing parties. The expert testimony of witnesses who have been selected jointly by both sides and who appear as disinterested court experts with all the prestige of the American Economic Association behind them would carry much weight and would help to take the guesswork out of the juries' and the judges' jobs of making important decisions.[64] In addition to this advantage, the procedure would help assure both business and government that the laborious work going into the preparation of their cases would at last be examined by court experts who would in effect communicate to the juries and the judges what in their opinion the merits of the contending arguments are. This might so improve court procedure that it would eliminate much of the customary scheming and subterfuge from antitrust trials, both sides becoming reasonably certain that they can talk straight sense to experts whereas they are now often compelled to cater to the often naive fancies and prejudices of jurymen and judges.

[63] So far the National Conference's proposals along this line have been adopted in only two states. See "Model Expert Testimony Act," *Uniform Laws Annotated*, Vol. 9, pp. 429–439. In a modification of the Rules of Civil Procedure in 1945 the Federal Trade Commission was given the power to call, on its own initiative, independent expert witnesses that might give testimony to help the courts to decide difficult economic issues. However, there seems to have been little use made of this power.

[64] An acknowledged national authority on the law of evidence has commented extremely favorably on the expert witnesses proposals of the National Conference of Commissioners on Uniform State Laws. See John H. Wigmore, *Evidence* (Boston: Little Brown and Co., 1940), 3rd ed., Sec. 563. It is his opinion that even though both sides would continue to present the testimony of their own expert witnesses, the "real" and convincing evidence would be provided by the court's own experts.

VI

It would indeed be a soft-hearted surrender to expediency to suggest out of hand that the persistence of monopolistic industries where they are not clearly necessitated by the technology of modern production and distribution indicates an inevitable structural tendency that is dictated by implacable extra-economic forces to the consequences of which we must passively reconcile ourselves. On the other hand, however, we cannot easily reject this suggestion either, not even by noting that the fault lies with our failure to have enforced the antitrust laws. The fact is that structurally we do face inevitabilities as inevitably as we face change. Our patchwork attempts to meet the challenge of the industrial changes of the last sixty years have blazed a trail of bewildering inconsistency, alternating firmness and weakness, and worst of all, uncertain and contradictory standards of what is considered fair or foul. For some years Professor Clark's "workable competition" has provided economists a soul-satisfying slogan with which to assault a complex economic problem. But in both the professional journals and the courts its application depends upon opinion, hope, prejudice, and, most lamentable of all, expediency. What we would all like and what we unquestionably need is a formula the application of which is relatively simple and the results of which are objective and indisputable. Such a formula would solve many of our problems and avoid much needless recrimination, agitation, and false hopes and promises. It is perhaps unfortunately true that dynamic social problems cannot and should not be solved by formula, but if formula can provide legitimate workable standards that are clear to prosecutor, judge, jury, and defendant, then perhaps we can look forward to fewer problems requiring our attention.

The main advantages of what has been suggested in this paper are that the program will help show: (1) when a monopolistic or oligopolistic situation keeps prices higher than is suggested by a more competitive plant; (2) whether bigness is or is not in any particular case a precondition to the efficiency claimed by its defenders; (3) whether oligopoly and/or monopoly is a precondition to the dynamic creative economic activity that makes our economy grow, prosper, and survive; and (4) whether we can have the benefits attributed to our industrial giants at prices the same or lower than at which we get them now. If the plan suggested here can help show that we can have all the benefits without bigness that are now attributed exclusively to bigness, and in an economic environment that increases economic opportunities and improves our political democracy, then the case for dissolution, divestiture, and divorcement is self-evident. Facts, not arguments, prices, not praises, would be the test in anti-monopoly cases. Courts would not be compelled to stand simultaneously as judges, investigators, economists, lawyers, arbitrators, and guardians of economic virtue. They would be reduced to routine functionaries, performing relatively simply legalistic jobs rather than making momentous decisions about the futures of business firms and the structure of the American economy, decisions that every self-respecting economist would be reluctant to make even after many years of quiet, thoughtful, and intensive study.

Unless we develop more specific standards of what is and is not permissible—or at least less arbitrary and uncertain ways of distinguishing between the per-

missible and the impermissible—if we drift into making sweeping denunciations and into harassing big business without reference to more adequate and predictable standards, we face the prospect of destroying the very thing we seek to protect. And unless the business community accepts a reasonable change of policy, if it persists in heaping abuse on honest efforts to solve this serious problem, if it continues its often dogmatically inveterate negativism, we can look forward to only four equally fearful possibilities. (1) We will have no meaningful antitrust program of one kind or another, the public will be unprotected, and big business will be in the saddle doing about what it pleases, but always careful to put up a pleasant but often insidiously fake masquerade of public benefaction; (2) uncertain and changing standards of what is or is not legal will result in the intensification of antitrust harassment, which may destroy the drive and creativeness of business and hence the vital impulse that makes capitalism worth while and in the name of which antitrust activity is undertaken; (3) organized business will react to harassment with an organized attack to shatter public confidence in the entire antitrust program, thus leaving it hopelessly ineffective, or it may move vigorously and effectively to dominate the control agencies themselves, leaving the public entirely unprotected, with the entire struggle leaving truth and facts hopelessly distorted and leaving public opinion, policy, and administration bewildered, frustrated, and impotent; and (4) the public will grow tired and disillusioned with all reasonable efforts and finally give its blessings to the nationalizers and socializers who claim their policies as providing the only real protection against private autocracy.

THE ASSET RESERVE PLAN: AN APPRAISAL[1]

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I. INTRODUCTION: BRIEF SURVEY OF ALTERNATIVE RESERVE PLANS

The subject of monetary reform has long been an intriguing one for economists, and interest in this area tends to be stimulated by both inflationary and deflationary developments. It was only to be expected that the inflationary experiences following World War II would bring forth a significant increase in the volume of monetary reform literature. Postwar developments have encouraged the dusting-off and re-examination of some previously developed reform plans, and the formulation of other plans which are essentially new. One might hope that out of this continuing activity there will emerge an improved counter-cyclical, or at least counter-inflationary, monetary management scheme which will meet the triple test of being theoretically appealing, manageable in practice, and susceptible to Congressional approval.

One of the older plans revived for discussion since the war is the commodity-reserve proposal. This proposal was carefully explored in the period from 1937 to 1944, particularly by Benjamin Graham and by Frank D. Graham.[2] More recently it has received the attention of Professor Friedman who has concluded that it is in some respects inferior to both the fiat standard and the gold standard, and that on balance it is probably superior to neither.[3] To Professor Friedman's conclusion might be added the comment that even if this plan did appear to have much to offer from a theoretical point of view, it would not meet the other two tests suggested above. The practical problems incident to getting such a plan adopted, on the one hand, and to managing it successfully if adopted, on the other, would be sufficiently difficult to justify dropping it from further serious consideration.

* The writer is indebted to Professors Raymond F. Mikesell, of the University of Virginia, and Philip E. Taylor of the University of Connecticut, for help which they have generously given in connection with the development of this article.

[1] This reserve technique is also known as the asset classes reserve plan.

[2] See Benjamin Graham, *Storage and Stability* (New York: McGraw-Hill, 1937), and *World Commodities and World Currency* (New York: McGraw-Hill, 1944); and Frank D. Graham, *Social Goals and Economic Institutions* (Princeton University Press, 1942), pp. 94–119. The following periodical literature on this subject is also of interest: W. T. M. Beale, Jr., M. T. Kennedy, and W. J. Winn, "Commodity Reserve Currency," *Journal of Political Economy*, August 1942; Benjamin Graham, "The Critique of Commodity-Reserve Currency: A Point-by-Point Reply," *Journal of Political Economy*, February 1943; Frank D. Graham, "Commodity-Reserve Currency: A Criticism of the Critique," *Journal of Political Economy*, February 1943; Willis J. Winn, "Commodity-Reserve Currency: A Rejoinder," *Journal of Political Economy*, April 1943; and F. A. Hayek, "A Commodity Reserve Currency," *Economic Journal*, June-September 1943.

[3] Milton Friedman, "Commodity-Reserve Currency," *Journal of Political Economy*, June 1951, pp. 203–232.

A second plan which in some respects is new, but which has antecedents extending back at least to the middle 1930's is the "monetary and fiscal framework for economic stability" suggested by Professor Friedman.[4] In its monetary aspects, this plan favors the substitution of 100 per cent reserves for the existing fractional reserve basis. This is of course strictly in the tradition of the "Chicago plan." Without going further into the new proposal which would blend together 100 per cent reserves and some rather novel automatic fiscal arrangements, it should be mentioned that the theoretical case for the new scheme has not yet been adequately established.[5] In addition, the monetary aspects of the plan alone are sufficiently radical to preclude any real probability of its becoming politically acceptable within the foreseeable future.[6]

The third of the older reforms revived for more recent consideration is the secondary reserve plan. This plan is of particular interest since it has at times received the sympathetic approval of the Board of Governors of the Federal Reserve System. The Board presented a memorandum to the House Banking and Currency Committee in December 1947, which contained a specific secondary reserve proposal.[7] The Board's immediate objective in recommending this plan was to gain from Congress increased ability to cope with inflationary pressures in the face of the pegged market for Treasury issues which existed at that time. Though there were serious shortcomings in the proposal recommended by the Board, it did appear to have the double advantage of holding some promise for more effective Federal Reserve control of inflationary credit expansion, and of being sufficiently conservative to attract Congressional attention.[8] As it turned out, the proposal did not arouse enough interest in Congress to get beyond the stage of discussion in Committees.[9]

[4] Milton Friedman, "A Monetary and Fiscal Framework for Economic Stability," *American Economic Review*, June 1948, pp. 245-264. This article is also included in *Readings in Monetary Theory*, edited by Friedrich A. Lutz and Lloyd W. Mints (New York: Blakiston, 1951), pp. 369-393.

[5] For a critical analysis of this proposal see Clark Warburton, "Monetary Difficulties and the Structure of the Monetary System," *Journal of Finance*, December 1952, pp. 523-545, and "Rules and Implements for Monetary Policy," *Journal of Finance*, March 1953, pp. 1-21. Also see G. L. Bach, "Monetary-Fiscal Policy Reconsidered," *Journal of Political Economy*, October 1949, pp. 383-394; and Philip Neff, "Professor Friedman's Proposal: A Comment," *American Economic Review*, September 1949, pp. 946-949. Professor Friedman's "Rejoinder" to Professor Neff, and Professor Neff's "Final Comment" also appear in the *American Economic Review*, September 1949, pp. 949-955, and pp. 955-956, respectively.

[6] For a brief analysis of the monetary portion of Friedman's proposal, see Clark Warburton, "Rules and Implements for Monetary Policy," *op. cit.*, pp. 9-17.

[7] See "Proposal for a Special Reserve Requirement Against the Demand and Time Deposits of Banks," *Federal Reserve Bulletin*, January 1948, pp. 14-23; and Edward C. Simmons, "Secondary Reserve Requirements for Commercial Banks," *American Economic Review*, March 1951, pp. 125-126. A similar proposal had been presented earlier by the Board in its *1945 Annual Report*.

[8] For an excellent critical analysis of the Board's 1947 version of the secondary reserve plan, see J. Brooke Willis, "Secondary Reserve Requirements," *Journal of Finance*, June 1948, pp. 29-44.

[9] Professor Simmons brings out the interesting point that this proposal reflected the personal philosophy of Marriner S. Eccles who was chairman of the Board of Governors at

Various modifications of the secondary reserve plan have been suggested, some of which have considerably more theoretical appeal than the Board's 1947 proposal.[10] It is reasonable to conclude that unless a better plan has been adopted, the secondary reserve scheme will be revived for discussion whenever the economy becomes faced with a serious inflationary credit expansion problem.

A new and interesting monetary reform suggestion has been developed and carefully analyzed by Professor Bronfenbrenner.[11] In this plan the so-called "loan ratio," which is the ratio of commercial bank deposits (other than interbank) minus commercial bank loans, to commercial bank loans, is singled out as a guide to monetary policy. This ratio is used since it can easily be determined statistically and since it approximates closely the conceptually neater, but statistically indeterminate ratio of "original" demand deposits to commercial bank loans. Since this ratio varies significantly from bank to bank, the first step in the implementation of such a reserve scheme would involve "freezing" the "loan ratios" of individual banks as of a given date. These ratios could then be "rolled back" by small monthly decrements until inflationary pressures had been sufficiently choked off.[12]

This plan has been suggested as a means for dealing only with the inflation problem, and Professor Bronfenbrenner has carefully explained that he considers it to be "a one-way street."[13] In this respect it is no different from most purely monetary reform proposals.

The "loan ratio" plan appears to have much to commend it when viewed abstractly, and it deserves to receive wider critical attention than it has as yet attracted. It should be added that practical acceptance of such a scheme would be difficult to achieve, for it could be expected to arouse opposition from several quarters, as Professor Bronfenbrenner has clearly indicated.[14]

With this brief review of some important alternative monetary reform plans established for reference purposes, attention can now be turned to the asset reserve proposal which is the main concern of the present article.

The asset reserve idea has been given a considerable amount of casual attention since it was mentioned publicly by Professor Jacob Viner early in 1951, but it has not received careful consideration either in the journals or in treatises

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the time; and that it was opposed in testimony before Congressional Committees by, among others, the President of the Federal Reserve Bank of New York. When Thomas B. McCabe became chairman of the Board of Governors in 1948, the Board began to push for higher legal primary reserve limits in place of secondary reserve powers. See Edward C. Simmons, *op. cit.*, footnote 8, p. 127, and footnote 10, p. 128.

[10] For a summary of some adaptations of the secondary reserve approach, see *Monetary Policy and the Management of the Public Debt*, Replies to Questions and Other Material for the Use of the Subcommittee on General Credit Control and Debt Management of the Joint Committee on the Economic Report, 82nd Congress, 2nd Session (Washington, D. C.: U. S. Government Printing Office, 1952), Part I, pp. 477–482.

[11] M. Bronfenbrenner, "A Loan Ratio for Inflation Control," *Journal of Political Economy*, October 1951, pp. 420–433.

[12] The loan ratio approach might be applied only to member banks, or it could be extended to include all commercial banks and even savings banks.

[13] M. Bronfenbrenner, *op. cit.*, p. 423.

[14] *Ibid.*, pp. 427–433.

on money and banking. It would not be strictly correct to place the origin of this idea in the postwar period, though the adaptations of it suggested by Professor Viner have resulted in part, at least, from circumstances peculiar to this period.[15] A limited, unselective, asset reserve requirement was established by the Australian government on a temporary basis in 1941, and it was made permanent in 1945.[16] The asset reserve basis used in Australia is substantially different from and should not be confused with Professor Viner's proposal.

Briefly stated, his plan would require member banks to keep as legal reserves specified percentages of various classes of loans and investments, the dollar amount of such reserves to be kept, as at present, on deposit in the Federal Reserve Banks. Power to vary the rate applicable to each classification independently, within the over-all limits imposed by law, would rest with the Board of Governors. Though the asset reserve scheme could be used in conjunction with the deposit reserve plan as a supplementary reserve technique, it is as a substitute for the present reserve approach that it is considered here.

Some of the more important advantages suggested for basing reserves upon assets include the following:

1. By the appropriate setting of reserve rates for various classes of assets the Federal Reserve should be able to influence not only the over-all amount of credit extended by member banks, but to channel this credit into or away from specific uses as well.[17] Thus the asset reserve plan, it is claimed, should enable the Federal Reserve to control more effectively both member bank credit expansion and the prices of government securities during periods of inflationary pressures.

2. Among rival suggestions for improving the basis for calculating reserves, the secondary reserve plan has received a certain amount of sympathetic attention in both governmental and academic circles as an anti-inflationary monetary-

[15] From correspondence with Professor Jacob Viner and conversations with Federal Reserve and Treasury economists, the writer has learned that both the Federal Reserve and the Treasury have at one time or another explored various aspects of the asset reserve plan, but their findings have not been released. Professor Viner brought this plan to public attention through a brief reference to it in a speech delivered at the White Sulphur Springs Conference in April 1951, and through a clarifying letter to the editor of the *New York Times*, appearing April 22, 1951.

Mr. Wistar H. MacLaren, it would seem quite independently, has developed the most complete statement of the plan existing outside the Treasury and Federal Reserve files, in his thesis, *The Selective Reserve Requirements Plan*, submitted in partial fulfillment of the requirements of the Graduate School of Banking conducted by the American Bankers Association at Rutgers University, New Brunswick, June 1951.

The Asset Reserve Proposal was discussed in rather general terms in the replies to questions directed by the Patman Subcommittee to the Secretary of the Treasury, and the Presidents of the Federal Reserve Banks, and in the hearings before the Subcommittee.

[16] See Robert B. Rivel, "Bank Reserve Requirements in Australia," *Journal of Finance*, September 1951, pp. 291–299.

[17] See Professor Viner's letter to the *New York Times*, *op. cit.*; and Wistar H. MacLaren, *op. cit.*, pp. 25–30. Professor Viner stressed the help which the plan might afford the Federal Reserve in controlling the total volume of bank credit in the face of pegged prices for government securities.

management tool.[18] Yet this plan is open to criticism by member banks on the grounds that it would dictate what particular assets they would have to hold as additional reserves. The asset reserve approach would carry the semblance at least of greater freedom of choice for member bank officials.

3. It has frequently been suggested that differentiation among member banks on a geographical basis is anachronistic. The asset reserve technique could be used to reduce substantially the inequities arising from a system of geographical classification.[19]

Though the second and third points are of some importance, only the first is sufficiently unique to warrant serious consideration here. The ensuing discussion is limited therefore to an appraisal of the asset reserve plan as a Federal Reserve technique for controlling both bank credit and the prices of government securities during inflationary periods. In developing the appraisal, it will be particularly helpful to compare this plan with the deposit reserve approach.

II. SELECTIVE VS. GENERAL MONETARY CONTROLS

A broad question which logically comes to mind and which should be considered briefly before proceeding to more practical points, is that of the appropriateness of the principle of selective as compared with the principle of general bank credit control. If the resource pattern resulting from the unrestricted functioning of the price mechanism in the bank loan and investment market is assumed to be a criterion of economic efficiency, reliance upon general controls would have to be considered preferable.[20] Thus from the standpoint of attaining maximum free-market efficiency of resource allocation, the deposit reserve technique appears to be superior to a scheme which bases reserve requirements upon classes of assets.

It should be emphasized that any technique for limiting the expansion of member bank credit can only be really effective in reducing over-all inflationary pressures if other financial institutions are prevented from expanding the scale of their lending operations to fill or partially fill any credit gap resulting from a suppression of member bank lending. This problem was met during the postwar inflationary period by giving the Federal Reserve temporary authority to impose credit controls on real estate and consumer loans applicable to all lending

[18] See for example, Lawrence H. Seltzer, "The Problem of Our Excessive Banking Reserves," *Journal of the American Statistical Association*, March 1940, pp. 24–36; and the statement presented to the House of Representatives Committee on Banking and Currency, December 8, 1947, by Marriner S. Eccles, as reported in the *Federal Reserve Bulletin*, January 1948, pp. 14–23. Also see Edward C. Simmons, *op. cit.*, March 1951, pp. 122–138.

[19] For a more detailed discussion of points two and three, as well as discussion of other less important possible advantages of the asset reserve scheme, see Joint Committee on the Economic Report, *Monetary Policy and the Management of the Public Debt*, *op. cit.*, Part I, pp. 126–128, 485–489; and Part II, pp. 729–731.

[20] This point was well developed by Professor Milton Friedman in his testimony before the Patman Subcommittee, and it need not be elaborated upon here. See *Hearings Before the Subcommittee on General Credit Control and Debt Management* (Washington, D. C.: U. S. Government Printing Office, 1952), pp. 690–691 and p. 728.

agencies. Though this procedure restricts the free play of the price mechanism in the credit market during inflationary periods, it does restore freedom to this market when inflationary pressures have passed. As a result, this approach to the inflation problem can be said to conform more closely to the philosophy of general controls than the asset reserve plan which involves the permanent use of selective controls over member bank credit. With this in mind, we turn now to a comparison of the anti-inflationary potentialities of the asset and deposit reserve approaches during the 1946–48 and 1950–52 inflationary periods.

III. THE ASSET RESERVE PLAN WITH EQUAL REQUIRED RESERVE RATES APPLIED TO ALL EARNING ASSETS[21]

Let us assume that the asset reserve plan had been in effect during the postwar inflationary periods, with required reserve percentages against member bank loans and investments set at the same levels as those actually applied to demand deposit liabilities for the different classes of member banks. Comparative figures illustrating this situation are listed in Table 1. At first glance it might seem surprising that the figures should indicate that for each of these years, a larger amount of reserves would have been required under the asset reserve scheme. After all, total deposits which include both "original" and "derived" deposits exceed total loans and investments. The explanation is to be found in the fact that time and savings deposits, for which the required reserve rate was much lower, are included in total deposits; whereas the rates applicable to demand deposits for the various classes of member banks have been used throughout in computing the dollar reserves that would have been required under the asset reserve plan. Thus, from the figures in Table 1, it might appear reasonable to conclude that less inflationary pressure would have been exerted by member banks had the asset reserve scheme been in use during the postwar period. Such a conclusion would overlook an important point, however.

Equal required reserve rates on the various categories of loans and investments under the asset reserve plan would have caused some shifting by member banks from United States Government securities to loans. During the 1946–48 inflationary period the net increase in the total loans of member banks was 13.1 billion dollars, and for 1950–52 the net increase was 19.2 billion.[22] By shifting roughly 1.4 billion dollars of Treasury issues to the Federal Reserve in the period from 1946 through 1948, and 2.5 billion from 1950 through 1952, the member banks would have been able to maintain loans and investments in non-Treasury issues on the one hand and deposits on the other at the same levels as

[21] This is not the way in which proponents of the plan have proposed that it be used, but this case is included for the sake of completeness.

[22] The 1946–48 increase was a reflection of increases of 8.7 billion dollars in commercial loans, 4.8 billion in real estate loans, 3.7 billion in consumer loans, 1.0 billion in agricultural loans; and of decreases of 4.3 billion in loans for the purchase of securities, and .8 billion in "other" loans. The 1950–52 loan expansion resulted from increases of 10.4 billion dollars in commercial loans, 3.9 billion in consumer loans, 3.4 billion in real estate loans, .5 billion in agricultural loans, .5 billion in loans for the purchase of securities, and .5 billion in "other" loans.

TABLE 1

Required Reserves of Member Banks, 1945–48 and 1949–52[1]

(Year-end figures in billions)

Year	Under the asset reserve plan against loans and investments[2]	Actual amount of required reserves under the deposit reserve approach	Difference
	Figures have been rounded		
1945	17.3	14.5	2.8
1946	17.2	15.6	1.6
1947	17.4	16.4	1.0
1948	19.8	19.3	.5
1949	17.0	15.6	1.4
1950	18.4	16.5	1.9
1951	20.9	19.7	1.2
1952	22.3	20.5	1.8

[1] Basic figures have been taken from various issues of the *Federal Reserve Bulletin*.

[2] The same required reserve percentages as those actually in effect for different classes of member banks have been used.

those actually held under the deposit reserve scheme.[23] The favorable loan opportunities prevailing during these two inflationary periods coupled with pegged and quasi-pegged markets for Treasury issues in all probability would have led to as great a loan expansion under the asset reserve plan as that which was actually experienced. The incentive to shift from governments to loans to the private sector of the economy would have stemmed partly from the yield differential in favor of loans and partly from the desire of individual banks to accommodate the legitimate credit requests of sound borrowers.[24] In short, setting equal required reserve rates against all earning assets during the post-war inflationary periods would have been little if any more effective in limiting the expansion of member bank credit than was the deposit reserve approach.

IV. SELECTIVE USE OF THE ASSET RESERVE PLAN WITH MAXIMUM RATES LIMITED TO THOSE ACTUALLY IN EFFECT FROM 1946 THROUGH 1952

It is, however, the selective aspect of the asset reserve plan which has been emphasized by its proponents; and had the plan been in use after World War II, the Federal Reserve would have found it expedient to set the reserve rate on governments sufficiently low and the rates on loans and other investments sufficiently high to have reduced the incentive for the sort of asset shifting mentioned above. To have been successful in this would have required a wide rate differential. Even with required reserve rates against loans and non-government investments set at the then prevailing maxima for demand deposits, and with

[23] These figures are rough approximations since they were computed by assuming an average required reserve rate of 20 per cent. The formula $y = r(d - y)$ can be used in computing the quantity of assets which must be shifted to overcome a given deficiency in reserves (d), given the required reserve rate (r).

[24] To refuse such requests the individual bank realizes is to lose not only the income from loans not made, but to lose customers to other lenders as well.

the rate against Treasury issues set at zero, it is questionable whether the differences in effective yields between short-term governments and other earning assets would have been sufficiently reduced to have discouraged shifting. As an illustration of this, suppose that a reserve of 25 percent for member banks in central reserve cities had been required for loans and all investments in nontreasury issues. This would have lowered the effective yield on such loans and investments carrying a nominal rate of four percent to 3.1 percent; and on those carrying a nominal rate of three percent to 2.4 percent.[25] These effective yields would still have been significantly higher than the nominal rates on Treasury bills during the postwar inflationary periods; and the placing of any reserve requirements on governments would have had the effect of increasing the yield differential.

It is possible that some undesirable shifting from governments could have been reduced under either reserve scheme by vigorous use of the Voluntary Credit Restraint Committee form of moral suasion.[26] Though this approach apparently worked with some effectiveness in reducing the rate of expansion of bank credit when it was put into operation following the outbreak of the Korean war, favorable results from it may be peculiarly limited to periods of more acute economic and political stress than that from 1945 through 1948. In any event such moral suasion is likely to be too weak and too unpredictable to be of more than minor aid in restraining the expansion of credit during inflationary periods.

Coupling well-devised secondary reserve requirements with either the asset reserve or the deposit reserve technique could provide a more effective means of reducing the asset shifting problem. It is to be doubted, however, that the secondary reserve measures proposed by the Board of Governors in the latter part of 1947 would have added much to the ability of either reserve plan to reduce inflationary shifting from governments.[27]

Finally, with substantial differential reserve requirements set to reduce the extent of inflationary asset shifting, a smaller dollar total of required reserves would have been impounded than with the deposit reserve approach. There is, therefore, little reason to believe that use of the selective reserve aspects of the asset reserve plan, with existing legal reserve limits, would have resulted in any smaller expansion of credit than was actually experienced during the postwar period.

V. SELECTIVE USE OF THE ASSET RESERVE PLAN WITH INCREASED LEGAL RESERVE LIMITS

The asset reserve plan with legal maximum required reserve percentages set at considerably higher levels would undoubtedly have enabled the Federal Reserve to repress significantly the growth in member bank loans and nongovernment investments from 1945 through 1948 and from 1949 through 1952.

[25] The effective yields would have been even higher for reserve city and country member banks.

[26] For a general discussion of the Voluntary Credit Restraint Program, see, "Voluntary Action to Help Curb Inflation," *Federal Reserve Bulletin*, November 1951, pp. 1347–1355.

[27] The reader's attention is again directed to the analysis of the defects in the Board's proposals developed by Professor Willis, *op. cit.*, pp. 32–42.

Further, this reserve approach with reserve requirements against governments set sufficiently below those against other assets would have eliminated much of the incentive for member bank inflationary asset shifting.

It must be recognized, however, that the deposit reserve scheme could have been made equally effective during these periods of pegged and quasi-pegged prices for governments by coupling some technique for Federal Reserve "freezing" of member bank holdings of Treasury issues with sufficiently raised reserve limits. The possible argument that the "freezing" of governments would have involved a greater use of direct control over member banks does not carry much conviction; for use under the asset reserve plan of a spread in required reserve rates adequate to have assured the desired amount of member bank holdings of government securities, though maintaining the fiction of member bank volition, would in actuality have left the banks little scope for freedom of action in setting their loan and investment policies. Thus, even with greatly increased reserve limits, the classes-of-asset reserve plan appears to offer no real advantage over a properly modified deposit reserve approach.

VI. SOME FURTHER CONSIDERATIONS[28]

(a) Comparison of the two reserve approaches has indicated that the asset reserve plan would have been of comparable effectiveness with the deposit reserve technique only if required reserve rates had been set well above their actual legal maxima. In view of the fact that Congress for more than a decade has resisted suggestions that the upper legal limit of member bank reserve requirements be raised permanently, there is little reason to believe that appreciably higher reserve limits than those existing would have been authorized had this plan been instituted at some time prior to 1946.[29]

(b) The asset reserve plan might prove to be inadequately selective during periods of serious inflationary pressures. For example, raising the required reserve percentage on particular types of commercial loans to discourage further increases in such lines of credit might fail to stimulate compensating increases in member bank interest charges on these credit lines as a result of the fear that this would upset carefully cultivated banker-borrower relationships. Or even if member bank interest charges on these lines were increased significantly, the amount of such credits desired by borrowers might not be appreciably reduced in the face of a highly optimistic state of business expectations. Under these circumstances the credit-restrictive effects of the asset reserve plan would become less selective in nature. To the extent that the selectivity-of-control aspect of the plan failed to materialize in periods of serious inflation, the strongest argument in its favor would be vitiated.

(c) The impact of selective reserve requirements would not be felt equally by individual member banks; and use of this approach would tend to discriminate

[28] Some of the points covered in this section are based upon questions raised by the Secretary of the Treasury, the Chairman of the Board of Governors, and the Presidents of the Federal Reserve Banks in their replies to the Patman Subcommittee.

[29] A slight, temporary, increase in the upper limits of required reserve percentages was granted by Congress in 1948, but this was continued only until June 1949.

against new and growing banks. Professor Bronfenbrenner has pointed out that his reserve proposal would be less discriminatory in this respect.[30]

(d) It might prove difficult under the asset reserve plan to set up technical definitions of the various types of assets. Also, if different reserve rates were levied against different commercial loan uses, borrowers might be encouraged to apply almost exclusively for loans carrying low reserve requirements. Once loans were granted it would not be administratively feasible to follow them up to see whether they were actually used for purposes covered by the loan classification under which they were granted.

(e) The problem of estimating the member bank credit expansion potential would be made much more difficult by having different required reserve rates for different classes of assets. This would complicate further the Federal Reserve's task of determining reserve rates appropriate for various levels of economic activity.

(f) Finally, as a general policy, it would seem desirable to define carefully, the emphasis being given by the Federal Reserve to credit and monetary considerations on the one hand, and to debt management problems on the other. The deposit reserve plan coupled with open market support of Treasury issues when necessary would reveal more clearly the relative emphasis being accorded each of these objectives than would the asset reserve scheme.

VII. CONCLUSION

The foregoing discussion strongly suggests that the asset reserve approach would provide little or no net anti-inflationary advantage over the deposit reserve technique. In support of this conclusion two broad points have been developed. First, it has been shown that from the standpoint of attaining maximum free-market efficiency of resource allocation, the deposit reserve technique would be superior to a scheme which would involve the basing of reserves upon assets on a selective basis. Second, it has been pointed out that the asset reserve plan, with existing legal reserve limits, would have given the Federal Reserve little, if any, more effective control over the expansion of member bank credit during the 1946–48 and 1950–52 inflationary periods. Even with substantially raised reserve limits assumed there is no clear advantage in favor of the asset reserve plan which would have warranted its being substituted for a properly modified form of the present reserve approach.

In view of the questions which have been raised, it would seem reasonable to conclude that the asset reserve technique, when considered as a possible substitute for the deposit reserve basis, does not meet effectively the triple test suggested in the beginning. Though Professor Bronfenbrenner has commented briefly that the plan appears to have merit if applied in the form of a penalty against loan increases, it is likely that most of the criticisms which have been mentioned here would apply *mutatis mutandis* if the asset reserve technique were adapted for use as a supplement to the deposit reserve approach.[31] An appraisal of the plan in this connection would be of interest, but it could not be included within the limits of the present paper.

[30] M. Bronfenbrenner, *op. cit.*, p. 426.
[31] *Ibid.*, p. 425, footnote 8.

PRICE FLEXIBILITY AND INDUSTRIAL CONCENTRATION[1]

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That prices are more flexible under competitive conditions than under monopoly has been a popular idea in economics for many years, and is commonly expounded in the undergraduate classroom.[2] During the nineteen thirties inductive studies were undertaken which appeared to validate this proposition.[3] These findings did not go unchallenged, but a large share of the criticism was directed at the inaccuracies of the data and the inconclusiveness of the proofs rather than at the underlying theoretical assumptions.[4]

On the other hand, using a different statistical approach, other writers have tried to demonstrate that there is little or no relationship between the degree of price flexibility and the degree of monopoly, thus apparently contradicting the more generally held notions. In a most impressive effort in this direction, Professor Richard Ruggles compared changes in indices of direct costs with changes in price indices for various economic sectors during the 1929–1931 period.[5] These comparisons demonstrated that the degree of price flexibility depended upon factors other than industrial concentration. Previous to this, Dr. Alfred Neal had compared prices and direct costs for the four year period 1929–1933 in 106 industries.[6] Those comparisons which showed constant absolute

[1] We are indebted to Professor Alfred E. Kahn of Cornell University for suggestions and criticisms.

[2] See Bruce W. Knight and Lawrence G. Hines, *Economics* (New York: Knopf, 1952), p. 446, as follows: ". . . the continual fluctuation of individual prices in response to changes in demand and supply, which would occur under free competition, is suppressed where an industry has a very small number of firms, a price leader, an open-price system. . . ." Other elementary textbooks indicate or imply similar propositions: C. Lowell Harriss, *The American Economy* (Homewood: Irwin, 1953), pp. 513–515; Paul A. Samuelson, *Economics*, 2nd Edition (New York: McGraw-Hill, 1951), pp. 520–523.

[3] Gardner C. Means, *Industrial Prices and their Relative Inflexibility* (Washington: Government Printing Office, 1935), and National Resources Committee, *The Structure of the American Economy* (Washington: Government Printing Office, 1939), Part I, Chapter VIII, pp. 122–152.

[4] See, for example, Tibor Scitovszky, "Prices under Monopoly and Competition," *Journal of Political Economy*, October 1941, XLIX.

[5] Richard Ruggles, "The Nature of Price Flexibility and the Determinants of Relative Price Changes in the Economy" in National Bureau of Economic Research, Conference on Business Concentration and Price Policy, 1952, mimeo. The present discussion was suggested by Professor Ruggles's challenging analysis.

[6] Alfred C. Neal, *Industrial Concentration and Price Flexibility* (Washington: American Council on Public Affairs, 1942).

mark-ups over direct costs were said to define flexible prices. He found both flexible and inflexible prices in competitive industries, and both flexible and inflexible prices in monopolistic industries, thus leading him to conclude that there was no pronounced correlation between industrial structure and price flexibility.

A discussion of price flexibility may be concerned with two broad issues: the factors responsible for flexible and inflexible prices, and the consequences of inflexible prices. We shall be concerned here only with the first issue. The problem of causation can be dealt with on a theoretical basis or statistically. As noted above, there are two conflicting statistical claims, one to the effect that industrial concentration plays an important role in determining the degree of price flexibility and the other that it does not. Our major purpose is to show that both of these conclusions are compatible with contemporary price theory. An interesting paradox follows from such a demonstration. The model which *a priori* seems more realistic is less strongly supported by the statistical findings than the model which seems somewhat unrealistic. We do not propose to resolve the problem in this brief note, but only to construct the models and illustrate the paradox.

It is necessary to begin the analysis with a precise definition of price flexibility. As in many definitional matters, a statement of what is *not* meant by the concept is most readily formulated. Some have defined the phenomenon in terms of the frequency and magnitude of price changes. This is unsatisfactory because, as others have suggested, it fails to relate price changes to other relevant economic variables whose behavior may vary from commodity to commodity, and/or from time to time for the same commodity. For example, if the price of product A and the price of product B fell by the same percentage between 1929 and 1932, this does not necessarily mean that the prices are of equal flexibility, since the costs of producing A and B may have fallen by different percentages. Furthermore, should the price of a commodity change by the same percentage as its costs, the conclusion that this was a flexible price might also be quite inappropriate if the cost variation was under the influence of monopoly in the product market and/or monopoly or monopsony in the factor market.[7] A similar objection can be raised to calling a price flexible simply because it changed by the same percentage as costs with a given change in demand. Thus, price flexibility and price change are seen to be not synonymous.

We define the phenomenon as the responsiveness of price to changes in costs and demand when these two variables have changed as they would under purely competitive conditions. Here is a standard which does not make price flexibility correspond to mere price changes or to other factors which themselves may be inflexible. Perhaps one may find the pure competition model of limited value for statistical purposes, or as a standard for anti-trust policy. Nevertheless, with this

[7] One might object that the *cause* of the variation in cost should have nothing to do with the question of whether or not the price is flexible. However, if monopoly in the sale of the product makes possible wage rigidity, it would not be correct to refer to a price which varies with minor cost variations as flexible. Of course from a statistical point of view these complex interrelationships would be difficult to determine.

definition, it should be possible to contrast the effect of changes in the cost and demand functions upon prices under competition with the effect of these changes upon prices under monopoly.

First, let us illustrate a situation in which shifts in costs and demand result in *the same degree of price flexibility regardless of the competitive structure.* Assume:

(1) the industry's supply curve (the summation of the relevant portions of the individual firms' marginal cost curves) has the same elasticity throughout its relevant range,
(2) the position and elasticity of the industry's supply curve is unaffected by alterations in the competitive structure,
(3) the demand curve for the industry's product (market demand curve) has the same elasticity throughout its relevant range,
(4) the position and elasticity of the industry's demand curve is unaffected by alterations in the competitive structure,
(5) any shift in the supply or demand curve does not alter the elasticity of the functions,
(6) shifts in the supply or demand curve are not affected by alterations in the competitive structure, and
(7) the firm operates to maximize profits by equating marginal costs to marginal revenue.

Diagram I below is constructed with these assumptions in mind. A log-log scale is used to simplify the presentation.[8] Given the demand and supply curves D_1 and S, the competitive price (P_{1c}) is lower than the monopoly price (P_{1m}).[9] Assume now a shift in the demand curve from D_1 to D_2. The resulting price under competition (P_{2c}) still is lower than the new monopoly price (P_{2m}). But note that the monopolist has lowered his price by the same percentage as the pure competitor.[10] According to our definition then, this case demonstrates the same degree of price flexibility regardless of the competitive structure.

The reader can demonstrate for himself that the same conclusion follows from a shift in the cost function by drawing in a parallel cost curve and comparing the change in price under competition with the change in price under monopoly. The conclusion in both cases follows from our rigid assumptions which make the percentage difference between price and cost at equilibrium constant under monopoly and nonexistent under competition.

It is dangerous to leave the argument at this point. Our assumptions, in a sense, circumvent the problem of price flexibility. They may be questioned when

[8] Thus a straight line demand or supply curve has constant elasticity. The slope of the curve determines its elasticity, and, therefore, parallel shifts involve no change in elasticity. With this type of diagram a demand curve of constant elasticity has a parallel marginal revenue curve.

[9] This would not be true, for example, in the special case where the industry supply curve is perfectly inelastic.

[10] On a log scale equal absolute distances represent equal percentage changes, $AP_{1c} - AP_{2c} = AP_{1m} - AP_{2m}$. The shift from D_1 to D_2, therefore, has resulted in equal percentage price changes both under conditions of competition and monopoly.

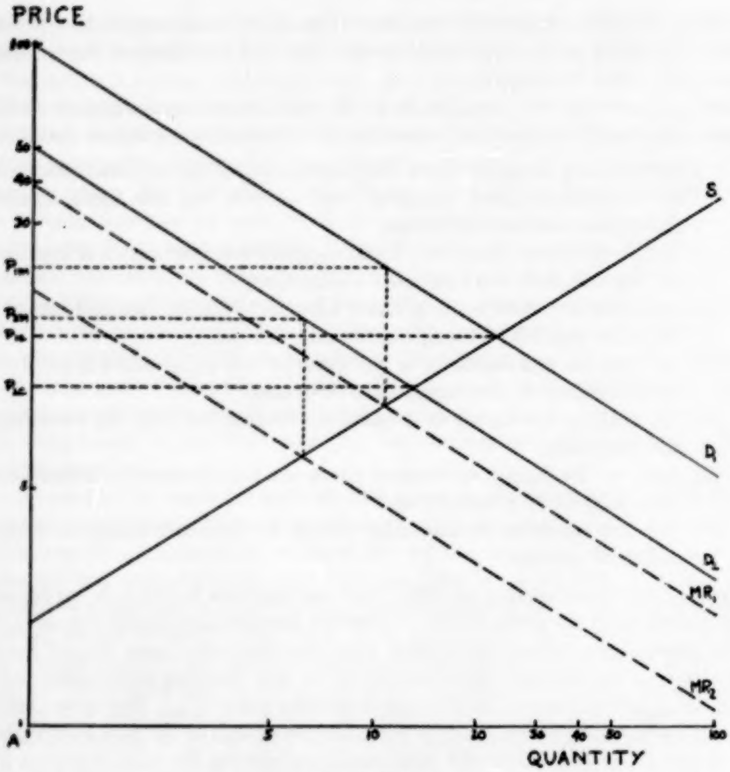

DIAGRAM I

dealing with the real world deviations from pure competition, and on this basis one can demonstrate the difference in flexibility under competition and monopoly. For example, let us relax assumption one. Suppose the supply curve does not have constant elasticity throughout its relevant range. Instead, let us assume one convex to the lower right hand corner of the demand-supply diagram. Then, if the demand curve shifts to the left, under monopoly the percentage mark-up of price over cost is no longer constant and price is more flexible under competition than under monopoly. In Diagram II, a fall in demand from D_1 to D_2 will cause the monopolist's price to fall by a smaller percentage than the competitor's.[11] It seems quite unrealistic to assume a supply curve of constant elasticity.[12] In

[11] Note that $A_{1c} - A_{2c} > A_{1m} - A_{2m}$, therefore the percentage fall in the competitive price exceeds the percentage fall in the monopoly price.

[12] There is an implicit refutation of a supply curve of constant elasticity in the results of a recent study dealing with what businessmen thought their average costs curves to be. See W. J. Eiteman and G. E. Guthrie, "The Shape of the Average Cost Curve," *Am. Econ. Rev.*, December 1952, XLII.

fact, one of the general nature postulated here to replace the one in the first assumption (i.e., sharply rising at high outputs) characterizes the extractive industries such as agriculture and petroleum. Changing assumption number one in this manner makes it possible for market structure to play a role in determining the degree of price flexibility. Market structure also plays a role in determining the degree of price flexibility if we remove assumption number two. To the extent that there is monopoly and/or monopsony in the factor market, the position and elasticity of the supply function may be different under monopoly and under competition. This may mean different degrees of flexibility.

Each of the remaining assumptions can be altered on various grounds. This is not done here because some of them, such as number three, are not of major importance to the basic analysis. As further evidence of the significance of the competitive structure in determining the degree of price flexibility, however, two of the additional assumptions are examined here. The fourth, that alterations in the competitive structure do not affect the position or elasticity of the industry's

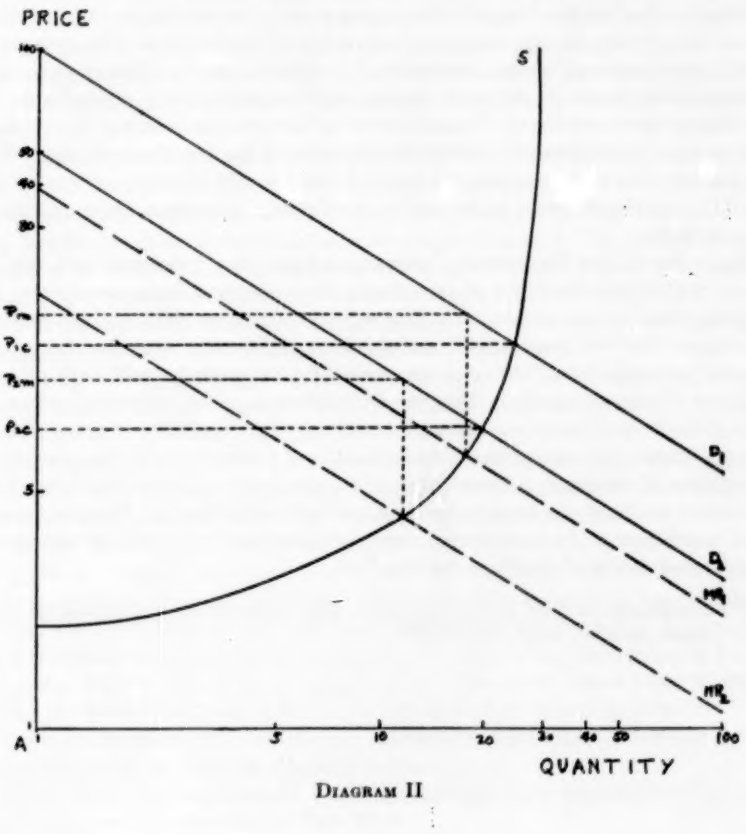

Diagram II

demand curve, is subject to serious objections. Under pure competition, the demand function is a datum to the firms in the industry, and is objective in this sense. When the number of firms in the "industry" is less than that required for pure competition, this is no longer true. Expectations with respect to the behavior of other firms and the buyers are taken cognizance of by the sellers. This is possible because of the fewness of sellers, and in this sense the market demand curve is subjective rather than objective. Under these circumstances, the demand curve upon which the firms base their actions may have different positions or elasticities under monopoly and competition. Shifts in the cost and demand functions, therefore, may result in different degrees of price flexibility.

Finally, let us examine the consequences of relaxing assumption number five (i.e., suppose the elasticity of the demand curve is altered when it shifts to the left or right). Assuming the supply curve has constant elasticity, if the demand curve becomes more elastic as it shifts to the left due to a decline in income, the monopoly price is more flexible than the competitive price. The converse is true if the demand curve becomes less elastic as it shifts to the left. The issue to be decided is whether the demand curve becomes more or less elastic with a decline in income. There are arguments on both sides of the question. The consuming public may become "bargain conscious," in which case the demand curve will become more elastic. Conversely, buyers may postpone many expenditures regardless of price, causing the demand curve to become more inelastic. In any case, it is impossible to generalize about the elasticity of the new demand curve. But, we can say that if the elasticity of demand changes with the business cycle price flexibility will be different under conditions of competition than under conditions of monopoly.

Since the "Great Depression," economists have been concerned with two aspects of the price flexibility phenomenon; its causes, and its consequences. We have directed our comments to the first segment of this problem, and have sought to suggest that the more traditional thinking in this area provides the correct answer to the question: "What is responsible for inflexible prices?" Only under a rigid set of assumptions is it theoretically valid to say that industrial concentration plays little or no causal role in determining the inflexibility of prices. By removing these rigid assumptions, we have offered a more general case, one where the degree of monopoly substantially affects the degree of price flexibility. That the latter model is not empirically unsupported is suggested by Ruggles's statistical treatment of the agricultural and petroleum industries and by certain deemphasized facets of the Neal analysis.[13]

[13] For a criticism of Neal, see Fritz Machlup, *The Political Economy of Monopoly* (Baltimore: Johns Hopkins, 1952), pp. 507–508.

COLLECTIVE BARGAINING ACCOMPLISHMENTS IN THE PAPER INDUSTRY

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INTRODUCTION

The two principal unions in the paper industry are the International Brotherhood of Pulp, Sulphite and Paper Mill Workers with a membership of 140,000 and the International Brotherhood of Paper Makers comprising about 70,000 members. The former is a semi-industrial union which generally extends its membership to all production and maintenance workers except those belonging to the latter union. The paper makers' union by tradition is a craft organization with skilled operations. However, in recent years it has not hesitated to organize new plants on either a semi-industrial or industrial basis when it served its purposes. Both unions are affiliated with the AFL. They are considered together, because they negotiate many joint contracts and are the leaders in the industry in determining wages and working conditions. Both unions have a comparatively long history of collective bargaining going back to the early years of the present century.

The industry is composed of many paper and converting plants scattered over the North American continent. Its products include newsprint, book paper, kraft board and paper, corrugated boxes, paper bags, paper milk cartons, etc. The largest producer is the International Paper Company. The second largest company in terms of total assets is the Crown-Zellerback Corporation. The St. Regis Paper Company with many plants throughout the United States ranks third in the industry. The next largest producer is the Great Northern Paper Company with mills located in Maine and the North East.

The pulp and paper companies are typically large scale businesses requiring a vast amount of capital, while the converting business is generally smaller in scale, in size and in capital requirements. Price leadership is characteristic of the industry. Since 1939 the tremendous demand for paper has provided an unlimited market for all producers. Capital expansion has been occurring at a rapid pace, and prosperous conditions have been enjoyed by most companies.

The key wage regional bargaining agreements in the United States are:

(1) Pacific Coast Association of Pulp and Paper Manufacturers, comprising 35 large producers on the West Coast. Since 1934 the association has been bargaining jointly with the two brotherhoods under the Uniform Labor Agreement.

(2) Southern Kraft Agreement comprising 9 plants of the International Paper Company. This is known as a multi-plant agreement and dates back to 1938. Unlike the West Coast negotiations, the unions do not bargain jointly.

(3) Great Northern and Robert Gair agreements. These are multi-plant agreements principally in the New England region.

(4) I.P. Book and Bond and St. Regis agreements. These are multiplant agreements principally in the state of New York.

(5) Consolidated and Marathon agreements. These are company-wide agreements with two outstanding producers in Wisconsin.

The key bargaining agreements in Canada are:

(1) British Columbia (Standard Agreement)—A multi-employer agreement.

(2) Quebec News Print Agreement. In the latter agreement some companies bargain jointly with the unions, but each company signs separate contracts.

Wage Policies During the Earlier Years

When the first locals of pulp, sulphite and paper mill workers were organized in New York and the New England states in 1901, the hours of labor for a tour worker were 72 a week and for a day worker 60. The weekly earnings were from \$7 to \$9. The first convention of the pulp and paper mill workers in 1902 went on record to ask for a 2½¢ an hour increase in wages, a 65 hour work week for tour workers and a 59 hour week for day workers.[1] Later demands insisted on the hourly basis of pay instead of a daily wage, 8 hour work day, time and one-half for overtime, and the classification of jobs.[2]

In the early years and through the 1920's the unions were seldom free from strikes. In fact, most of the energy of the officers and practically all of the finances of the unions were consumed in conducting strikes. The five-year strike of the International Paper Company in the early 1920's resulted in the loss of all the international union's locals in the company's mills.

In the latter part of the 1920's the business boom enabled the brotherhoods to obtain many gains in wages and working conditions. In spite of prosperous conditions, the unions were unable to secure a 45¢ minimum wage in all mills in the industry.[3]

With the coming of the great depression in 1930, unemployment became acute in the paper business. This coupled with keen competition in the industry put the unions on the defensive in their bargaining conferences. At first they fought to hold wages and working conditions, but beginning in November 1930, a number of non-union firms put into effect a 10 per cent reduction in wages. The international unions protested but could not prevent such action. The unions were successful in stalling further reductions until the spring of 1931. Wage reductions in the unionized mills were moderate, averaging 5 per cent, with no decrease at all in the base rates of most mills. In a few union mills no reductions were experienced in 1931.[4]

Before the close of 1931 the paper industry went from bad to worse. Some companies were operating only a few of their plants. A sharp drop in the price of paper in the spring of 1932 upset all hope of wage stabilization, and the unions were faced with a demand for wage reductions. After a number of conferences

[1] *Introducing Your Union*, International Brotherhood of Pulp, Sulphite and Paper Mill Workers, Department of Research and Education, Washington, D. C., p. 8.

[2] *Proceedings of the 14th Convention of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers*, 1931, p. 10.

[3] *Ibid.*, p. 11.

[4] *Proceedings of the 16th Convention of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers*, 1935, p. 15.

the unions negotiated agreements with the majority of companies for wage reductions averaging 8½ per cent, while accepting for the first time a decrease in the base rates.[5]

By the spring of 1933 the workers had taken an average reduction in wages of about 13½ per cent. Before long the manufacturers insisted that a substantial reduction in wages was necessary. Faced with the third cut in wages since the beginning of the depression, the unions decided to contest every inch of ground. Wage cuts from 7 to 9 per cent were experienced. In summarizing the policy of the union at the 1935 convention of the pulp, sulphite and paper mill workers, President Burke said: "Because of the organized strength of the small minority of workers in the industry, the union was able to protect the hourly wage rates to a remarkable degree. Although the union took three reductions in wages, they were moderate, averaging about 20% in the union mills. Most of the union mills experienced only a 10% reduction off the base rate. The workers in all the union mills were able to save the union shop agreements, time and one half for overtime, and other union standards. In contrast, the workers in the non-union mills were forced to take many more reductions, and in addition, lost time and one half for overtime."[6]

STABILIZATION UNDER THE NATIONAL INDUSTRIAL RECOVERY ACT

The passage of the NIRA in 1933 proved beneficial to both workers and management in the industry. It marked the stoppage of further wage reduction; it stabilized the price structure; it made for greater parity in labor costs between union and non-union firms; and it gave the workers the protection of the government in their organizing and bargaining activities. The labor codes for the industry provided for a maximum of 40 hours a week and a minimum wage of 38¢ for men and 33¢ for women in the northern zone, and 30¢ for both men and women in the southern zone, time and one-third for time workers in excess of 8 hours in any one day. After the codes became effective on November 7, 1933, most of the union mills in the North increased the minimum rate of wages from 38¢ to 40¢. On the Pacific Coast the unions obtained a 45¢ minimum for men and 37¢ for women.[7]

When the NIRA was declared unconstitutional, the unions feared that the workers in the non-union factories would be at the mercy of the employers. A campaign to organize the unorganized was deemed necessary to protect the standards set up by the codes.[8]

WAGE POLICIES, 1935–1940

With the sharp business recovery and the concomitant rise in the cost of living, the pulp and sulphite workers at their 1935 convention went on record demanding

[5] *Ibid.*, p. 15.

[6] *Ibid.*, p. 16.

[7] *Ibid.*, pp. 19–23; *Proceedings of the 14th Convention of the International Brotherhood of Paper Makers*, 1935, pp. 17–18.

[8] *The Pulp, Sulphite and Paper Mill Workers' Journal*, vol. 19, June, 1935, p. 2.

a 7¢ increase in wages per hour and approved the 6 hour day. At the 1937 convention the union passed a resolution approving a 15¢ increase in wage rates or more if exceptional conditions in the different mills or districts seemed to warrant it. The union policy appeared to be opposed to seeking a uniform wage scale throughout the industry. The committee on wages and working conditions on taking this stand said that it was difficult to establish uniform wage schedules in the paper industry because of differing local and financial conditions of the 700 companies in the nation.

During the period from 1937 to 1939 the union was successful not only in obtaining wage increases from 15 to 20 per cent but also in making a substantial improvement in working conditions. Time and one-half for overtime work and vacations with pay were secured in many mills. The recession in business beginning in July 1937, bringing with it sharp reductions in the price of paper, caused some wage decreases. For example, in the Southern Kraft mills there was a 5 per cent reduction in wage rates, but on the West Coast the workers took no wage decrease. In most cases, the wage cuts were restored in about a year.[9]

At the 1939 convention of the International Brotherhood of Pulp, Sulphite, and Paper Mill Workers, resolutions were adopted favoring pensions and holidays and vacations with pay. The paper makers' union at their 1939 convention also passed a resolution favoring annual vacations with pay.[10]

WAGE POLICIES, 1940–1950

Except for the war years, the negotiations between the international brotherhoods and the Pacific Coast Association of Pulp and Paper Manufacturers reveal the demands of the unions and the arguments used in their promotion. (According to President Burke, the basic pattern of demands and the tactics of the two unions would be similar in all parts of the country with minor deviations.) In the three years prior to the entrance of the United States in World War II 1940–1942, the brotherhoods demanded increased wages, vacations with pay and other miscellaneous improvements. In 1940 the unions on the West Coast sought a 17¢ per hour increase in wages but settled for 2½¢.[11] In the Southern Kraft mills a 3¢ per hour increase was obtained. From The Great Northern Paper Company the unions won one week's paid vacation for one year's serivce.[12] According to the paper mill workers, the big accomplishment of 1940 was the

[9] *Proceedings of the 18th Convention of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers*, 1939, pp. 53–55; *Proceedings of the 15th Convention of the International Brotherhood of Paper Makers*, 1939, p. 25.

[10] *Proceedings of the 18th Convention of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers*, 1939, pp. 112, 196; *Proceedings of the 15th Convention of the International Brotherhood of Paper Makers*, 1939, p. 134.

[11] *Record of the Negotiations between the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, the International Brotherhood of Paper Makers, and the Pacific Coast Association of Pulp and Paper Manufacturers*, May 27, 1940, to May 31, 1940, pp. 204–218.

[12] *The Pulp, Sulphite and Paper Mill Workers' Journal*, vol. 28, January–February, 1944, p. 1.

start made in getting vacations with pay.[13] With the opening of agreements in 1941 the brotherhoods obtained wage increases from 5¢ to 10¢ an hour from most of the mills in the United States. Many of the locals, in addition, obtained one week's vacation with pay, and a substantial number received two weeks' paid vacation.[14]

In the spring of 1942 the unions on the Pacific Coast asked for a 15¢ per hour increase, but the final settlement was a 10¢ per hour increase. To strengthen their case for improved wages and other benefits, the brotherhoods in the three years preceding the war stressed the following factors: (1) the rising price of paper and the exceptionally good profits of the paper companies; (2) the upward movement of wages; (3) the increased cost of living; (4) the lag in paper workers' earnings in comparison with other industries; (5) the danger of labor turnover; (6) the higher productivity of the workers in the West Coast paper and pulp industry.[15]

The policy of the brotherhoods during the war period was to turn to "fringe benefits" and the correction of "wage rate irregularities" which would not be in violation of the "Little Steel Formula." The unions sought two weeks' vacation with pay, a pension system, 6 paid holidays, shift differentials, group insurance including life, hospitalization and accident.[16] In order to adjust wage rate irregularities, the paper makers set up a job analysis service and worked in cooperation with the paper companies in the analysis of operations in the mills.[17]

With the termination of the war and the elimination of wage controls, the unions immediately pressed for substantial concessions. The demands of the unions in their negotiations with the Pacific Coast employers included a wage adjustment of 10 per cent to be applied to present hourly rates, an additional 18¢ per hour across the board increase, and miscellaneous fringe benefits. The unions finally settled for an increase in rates of pay of 10 per cent plus a 7½¢ increase, and three holidays with pay.

At a meeting of the joint executive boards of the two international brotherhoods in January 1948, it was decided that in the spring the two unions would seek wage increases consistent with the rising cost of living and company earnings.[18] In their negotiations with the Pacific Coast Association of Paper Manufacturers, the unions asked for 22½¢ increase on all rates up to $1.50 and 15¢ on all rates above $1.50. The employers' final offer of 9 per cent on all rates with a minimum increase of 15¢ on all male rates was agreed upon by all representa-

[13] *The Pulp, Sulphite and Paper Mill Workers' Journal*, vol. 24, July–August, 1940, p. 1.

[14] *Proceedings of the 19th Convention of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers*, 1941, p. 85.

[15] *Record of the Negotiations between the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, the International Brotherhood of Paper Makers and the Pacific Coast Association of Pulp and Paper Manufacturers*, 1942, pp. 87–93, 170–179.

[16] *Proceedings of the 20th Convention of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers*, 1944, pp. 151, 153, 165; *Proceedings of the 17th Convention of the International Brotherhood of Paper Makers*, 1946, p. 11.

[17] *The Paper Makers' Journal*, vol. 43, April, 1944, pp. 3–4.

[18] *Minutes of the Joint Board Meetings of the International Brotherhood of Paper Makers and the International Brotherhood of Pulp, Sulphite and Paper Mill Workers*, January 8, 1948.

tives. This settlement gave a base rate for male workers of \$1.42½ which amounted to an increase in all male rates from 15 to 25¢.[19]

In spite of the business recession of 1949, the joint executive boards of the two international brotherhoods in January 1949 went on record for the opening of all joint labor agreements in the spring and for a vigorous pressing for higher wages. The joint boards felt that the profits of the paper industry appeared good.[20]

At the joint bargaining session with the West Coast employers in April 1949, the unions asked for a 7½¢ per hour upward revision on all wage rates and improvements in paid holidays and vacations. The employers refused to grant the increase because of the cloudy outlook for business. It was finally agreed to reconvene in September of 1949 to reappraise the business situation. Since general wage progress could not be made, the union concentrated on pensions and other fringe items with resulting improvement in fringe benefits equal to 5¢ per hour for most members.[21]

At the union meeting of the joint boards in January 1950, President Phillips of the International Brotherhood of Paper Makers outlined the pattern of demands of the two unions for 1950. He pointed out that improvements should be achieved in pensions and welfare programs. Since social security was unlikely to be satisfactory for a long time, it should be supplemented. He believed that the employers should assume more, if not all, of these programs and three weeks' vacation for older employees. Because of inflation, there was a need for an increase in wages, and consideration should also be given to matters of severance pay, sick leave, and in some instances to the guaranteed annual wage. President Burke of the pulp and paper mill workers voiced agreement with this program but warned that the details must be decided later on the basis of areas and conditions. It was voted that the international unions go on record as intending to open contracts and wherever practicable to seek wage increases as well as improvement in working conditions and social benefits.[22]

In the bargaining negotiations of the two brotherhoods in the spring of 1950, the unions requested a 5 per cent upward revision of wages; 3 weeks' vacation after 15 years' service; 2 weeks' vacation after 3 years' service; 3 additional nonrestricted holidays; 8 hours pay for all employees and time and one-half for all time worked in excess of 8 hours per day; an increase in the night shift differential from 4¢ to 6¢ per hour.

The major changes agreed upon during the 1950 West Coast negotiations were:
(1) General wage increase of 3 per cent to apply to all jobs across the board.

[19] *Record of the Negotiations between the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, the International Brotherhood of Paper Makers and the Pacific Coast Association of Pulp and Paper Manufacturers*, April, 1948, pp. 76–78, 118–119, 164, 214.

[20] *Minutes of the Executive Boards of the International Brotherhood of Paper Makers and the International Brotherhood of Pulp, Sulphite and Paper Mill Workers*, January 13, 1949, p. 7.

[21] *The Paper Makers' Journal*, vol. 51, March, 1952, p. 3.

[22] *Minutes of the Meeting of the Joint Board of the International Brotherhood of Paper Makers and the International Brotherhood of Pulp, Sulphite and Paper Mill Workers*, January 12, 1950.

This brought the base rate for women's jobs to $1.20 per hour and for men to $1.47;

(2) Three weeks' vacation after five years of continuous service;

(3) Three nonrestricted holidays, New Year's Day, Memorial Day, and Thanksgiving, will be paid holidays.

Considerable progress was made in the 1950 negotiations in overcoming the wage discrepancies between northern and southern pulp and paper mills. Speaking about the good settlement with the Union Bag and Paper Corporation at Savannah, Georgia, the Southern Kraft Division of the International Paper Company, and the West Virginia Pulp and Paper Company at the Charleston mill, Mr. Burke said: "It is not so many years ago that the northern pulp and paper manufacturers used the low rates paid in southern mills as a reason for not giving wage increases. Today, however, we never hear any reference to the low rates paid in southern mills in our negotiations with northern companies, because there are no low rates. Amazing progress has been made in building up wage rates and improving working conditions in the pulp and paper mills in the Southland."[23]

At the 1950 convention of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers the union went on record to gain pension plans by collective bargaining. It recommended that retirement benefits should in no case be less than $100.00 a month and that the cost of the pension plan should be borne entirely by the companies.[24]

WAGE POLICIES DURING THE KOREAN WAR

Because of the rapid advance in the cost of living with the beginning of the Korean War, the brotherhoods called upon the paper industry to open negotiations for an upward revision of wage rates in September 1950. In most instances wage increases were obtained that equaled or exceeded those negotiated in the spring of 1950.[25]

In 1951 the brotherhoods were prepared to press for an improvement in the conditions of the membership in spite of wage controls over the economy. Stabilization regulations provided a 10 per cent increase in wage rates over January 1950 levels. The paper makers felt they were entitled to a larger increase, because their last wage increase in the spring of 1950 was a fourth round advance instead of a fifth round as was the case in many industries. The 1949 recession in the industry accounted for this lag in the paper workers' wages, as many wage increases were omitted in that year. It was the hope of the unions to restore the normal relationship in wage rates with the other unions.[26]

The 1951 negotiations between the brotherhoods and the West Coast manu-

[23] *News Letter* from the International Office of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, June 22, 1950, p. 20.

[24] *Proceedings of the 22nd Convention of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers*, 1950, p. 58.

[25] *The Paper Makers' Journal*, vol. 51, March, 1952, p. 3.

[26] *The Paper Maker*, vol. 4, January 31, 1952, p. 8.

facturers resulted in a general wage increase of 12½¢ per hour across the board. In view of the wage stabilization 10 per cent formula, only 5½¢ of the negotiated increase was made effective without prior approval of the Wage Stabilization authority. The unions and the manufacturers agreed to file a joint application requesting approval of the additional 7¢ per hour, retroactive to June 1, 1951, as well as some agreed changes in fringe benefits.[27]

The Wage Stabilization Board approved the request of the unions and companies for the full 12½¢ raise under the uniform agreement, and an 8¢ increase in wages as bargained by the unions in the Southern Kraft agreement.[28]

The year 1952 showed continued gains through the negotiations of the two brotherhoods. The major items agreed upon were:

(1) General wage increase: 4½ per cent across the board in all hourly job rates.

(2) Health and welfare: a health and welfare plan on a 60 per cent employer-40 per cent employee basis.

(3) Job analysis: a revision in job analysis program with resulting increases in step values.

At the 1953 spring negotiations, the employers on the West Coast took a determined stand to resist the wage demands of the brotherhoods. They pointed out that it was impossible to grant the unions' wage requests primarily on the grounds that further widening of the wage differential between the West Coast paper industry and other regions would jeopardize the jobs and profits of the West Coast plants. The unions, not ready to accept defeat, notified the federal government that a dispute existed and requested the appointment of a conciliator.[29] It is interesting to note that the final settlement for 2½ per cent increase in wages was preceded by a 3 per cent increase in the Southern Kraft agreement. These settlements raised the male common rate for the West Coast to $1.76½ an hour against $1.37 for Southern Kraft.

Again in 1954 the West Coast manufacturers, employing the same arguments, refused to grant the union request for wage increases. Once more the Southern Kraft in a leadership role won a general increase of 7¢ per hour compared to 4½¢ on the Pacific Coast. The new base rate for the South is $1.44 compared to $1.80 for the West Coast and represents a narrowing of the wage differential by 3½¢ over that of 1953.[30]

[27] *Record of Negotiations between the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, the International Brotherhood of Paper Makers and the Pacific Coast Association of Pulp and Paper Manufacturers*, May, 1951, pp. 33, 49, 51–52, 103, 105, 111–155, 273–281, 308–328.

[28] *The Paper Maker*, vol. 4, January 31, 1952, p. 1.

[29] *Record of Negotiations between the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, the International Brotherhood of Paper Makers and the Pacific Coast Association of Pulp and Paper Manufacturers*, April, May, 1953, pp. 21–22, 34–43, 161, 174, 195, 230, 355, 360, 364.

[30] *Record of Negotiations between the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, the International Brotherhood of Paper Makers and the Pacific Coast Association of Pulp and Paper Manufacturers*, May, 1954, pp. 171–185; *News Letter* from the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, July 27, 1954.

CONCLUSIONS

In this study of the collective bargaining accomplishments of the International Brotherhood of Pulp and Sulphite and Paper Mill Workers and the International Brotherhood of Paper Makers the following observations are pertinent.

Wage Trends in the United States

The brotherhoods have not followed a uniform wage scale for the entire nation, because of their desire to take into consideration regional cost differences. However, they have worked to eliminate the wage differentials between northern and southern mills as revealed in Table 1. Although the South still possesses a lower base rate, its semi-skilled and skilled rate jobs are now higher than in the North, for the most part. The West Coast region, which has enjoyed the highest wage structure in the industry, is losing its position to the South, particularly in the skilled rate jobs. While the semi-skilled and unskilled rates are still considerably below the Pacific Coast, percentagewise they are moving up somewhat faster than on the West Coast. The unions feel the South should be the leader in wage rates because of its cost advantages. Its lower costs are due primarily to the longer growing season for timber which makes for an abundance of cellulose and to the rapid capital expansion which is reflected in more modern equipment. Recognizing this, the Pacific Coast employers in the last two years have protested the continuance of their role as leader in wages for the paper industry.

Overall Wage Earnings

One of the main objectives of the unions has been to secure and maintain a living wage for its membership. Although considerable progress was made toward this goal during the 1920's, the great depression of the 1930's caused a temporary setback. The NIRA assisted the unions in securing wage increases in all work classifications. Although some cutting in wages was experienced in the recession of 1937, in most cases wage cuts were restored by the following year. During the 14-year period 1939–1952 as shown in Table 2, the brotherhoods have been able to keep wages ahead of the rising price level.

Average hourly earnings have advanced from .592¢ in 1939 to $1.61 in 1952, or 172 per cent, and average weekly earnings from $23.72 to $68.91 or 190.5 per cent. The cost of living during the same period rose from 99.4 to 189.7, or approximately 91 per cent. Deflating hourly and weekly earnings by the cost of living, we find that the real average hourly earnings rose from .596¢ in 1939 to .849¢ in 1952, or 42 per cent, while real average weekly earnings increased from $23.86 to $36.33, or 52 per cent. In terms of productivity, the 42 per cent advance in real hourly earnings would indicate that the unions have succeeded in keeping abreast of the 2½ per cent annual increase in output per man hour for the entire nation. However, the unions feel that in some regions productivity has outstripped the national average. The South and West Coast particularly have shown more rapid advances than in other regions.

TABLE 1

Average Straight-time Hourly Earnings of Workers in Selected Skilled, Semi-skilled and Unskilled Occupations in the Pulp, Paper and Paperboard Mills, by Regions, Oct. 1945 and April 1952[1]

Department and Occupation	United States		New England		Middle Atlantic States		Central States		South		Upper Lake States		Mid West		Pacific	
	Avg. Hourly Earnings															
	1945	1952	1945	1952	1945	1952	1945	1952	1945	1952	1945	1952	1945	1952	1945	1952
Woodyard and Wood Preparation																
Crane Operators	—	1.87	—	1.47	—	1.64	—	1.89	—	2.03	—	1.67	—	1.64	—	1.99
Chippermen	.78	1.48	.72	1.36	.81	1.42	.66	1.42	.72	1.39	.73	1.46	—	1.42	1.02	1.77
Pulp Making																
Cooks (Digester operators)	1.08	1.88	.94	1.62	1.06	1.65	—	1.72	1.22	2.12	1.02	1.74	—	1.59	1.21	2.19
Screenmen	.79	1.56	.73	1.38	.77	1.39	.68	1.54	.80	1.59	.78	1.47	—	1.47	1.04	1.85
Bleachermen	.96	1.77	.79	1.48	.87	1.48	.79	1.83	1.09	2.13	.84	1.59	—	1.57	1.20	2.15
Recovery, Caustic and Acid Making																
Acid Makers	.97	1.66	.90	1.54	1.01	1.54	—	—	1.11	—	.87	1.56	—	—	1.15	1.99
Paper and Paper Board																
Beatermen	.82	1.47	.76	1.35	.81	1.45	.76	1.27	.83	1.39	.84	1.47	—	1.56	.96	1.75
Machine Room																
Paper-Machine Tenders	1.07	1.97	1.10	1.75	.99	1.88	.97	1.85	—	2.41	1.15	2.01	—	1.97	—	2.39
Fourth Hands	.77	1.45	.75	1.35	.76	1.38	.58	1.34	—	1.62	.82	1.48	—	1.47	.94	1.75
Finishing, Roll																
Rewinder Operators	—	1.51	—	1.41	—	1.48	—	1.43	—	1.56	—	1.58	—	1.54	—	1.78
Finishing Sheet																
Cutters, guillotine type	.90	1.53	.80	1.40	.98	1.55	.72	1.45	.73	1.47	1.01	1.51	—	1.51	1.13	1.78
Cutters, rotary or sheet	.82	1.49	.75	1.46	.82	1.50	.68	1.40	.93	1.36	.84	1.47	—	1.50	1.02	1.83
Common Labor																
Janitors	.71	1.35	.70	1.27	.69	1.30	.65	1.12	.62	1.23	.75	1.37	—	1.33	.91	1.67
Miscellaneous																
Electricians, Maintenance	1.12	1.87	.96	1.61	1.07	1.71	1.04	1.86	1.25	2.07	1.07	1.77	—	1.88	1.25	2.15
Millwrights, Pulp and Paper	1.06	1.80	.95	1.58	.99	1.63	.97	1.74	1.22	2.02	.92	1.76	—	1.75	1.22	2.10
Pipe fitters, Maintenance	—	1.86	—	1.61	—	1.68	—	1.87	—	2.05	—	1.76	—	1.75	—	2.11
Over-all Average Hourly Earnings	.83	1.52	.79	1.39	.84	1.47	.75	1.46	.79	1.53	.86	1.51	—	1.55	1.02	1.86

[1] U. S. Department of Labor, Bureau of Labor Statistics, Washington, D. C. Wage Structure Pulp, Paper and Paper Board Oct. 1945–April 1952. Series No. 34, pp. 17–18, Series No. 91, pp. 10–15.

The above table is intended to show wage trends in various occupations between the regions. Because of some differences in job content between 1945 and 1952 the changes in wage rates do not reflect accurately the extent of changes in all cases.

TABLE 2

Average Hourly and Weekly Money Earnings and Real Hourly and Weekly Earnings in Paper and Allied Products 1939–1953[1]

Year	Avg. Hourly Money Earnings	Avg. Weekly Money Earnings	Avg. Hourly Real Earnings 1935–39 = 100	Avg. Weekly Real Earnings 1935–39 = 100
1939	.592	23.72	.596	23.86
1940	.613	24.48	.612	24.43
1941	.660	27.75	.627	26.38
1942	.743	31.29	.637	26.83
1943	.798	36.02	.645	29.12
1944	.846	38.95	.673	30.99
1945	.883	40.50	.687	31.49
1946	1.001	43.47	.718	31.16
1947	1.165	50.21	.730	31.46
1948	1.291	55.25	.751	32.14
1949	1.342	55.96	.790	32.88
1950	1.412	61.14	.821	35.57
1951	1.526	65.77	.822	35.44
1952	1.61	68.91	.849	36.33

[1] *The Handbook of Basic Economic Statistics*, Economic Statistics Bureau of Washington, D. C., 1948 Annual Edition, Jan. 1948, vol. II, p. 58 and 1953 Annual Edition, Jan. 1953, vol. VII., p. 35.

Monthly Labor Review, U. S. Dept. of Labor, B.L.S., Washington, D. C., May, June, 1953, vol. 76, p. 671.

The difference in average hourly earnings between Table No. 1 and Table No. 2 for 1945 and 1952 is due to the fact that Table No. 1 is based on straight time hourly earnings while Table No. 2 is based on gross hourly earnings..

Fringe Benefits, Guaranteed Wage

The brotherhoods have taken the position that fringe benefits should be confined within definite limits of vacation and holidays with pay, sick leave with pay, group insurance, old age retirements, and shift differentials. In some sections of the country local peculiarities have sometimes altered this policy. Many workers now receive pay for five weeks annually for which they render no service (3 weeks vacation, 6 holidays and 6 days for sick leave).

The paper industry has been a leader in fringe benefits. Since 1940 the brotherhoods have bargained for welfare benefits. Almost all of their contracts now have vacation and holiday provisions. More than 75 per cent have some sort of retirement provision. Most of the contracts now have hospitalization, health, life, and accident insurance either on a contributory or non contributory basis. In some cases health and accident benefits cover the entire family. According to President Burke, the cost of fringe benefits to the employers amounts to 25¢ per hour on the average. Hourly wage rates, therefore, do not represent the true cost of labor as was formerly the case.

The guaranteed annual wage has not been pressed by the brotherhoods as have so many of the CIO unions. No plan has yet been devised which will solve the problems necessary for its acceptance. The principal obstacles are: the dis-

persion of the industry, diversification, the large number of companies (700), and keen competition at times.

Union-Management Cooperation

The high caliber of union leadership has brought about cooperation with management in solving industry problems. The first formal effort in cooperation was evidenced during the great depression when the unions sought to work with management in controlling production. Under the NIRA the unions worked with employers in establishing codes of fair labor conditions. During the second World War the paper makers' union, through its job analysis service, cooperated with management in the establishment of equitable wage rates and wage scales. In the West Coast association, the employers and the unions have worked together on a revision of company wage scales to correct inter-plant and intra-plant inequities.

It is quite widespread in the paper industry for both employers and unions to approach each other in the solution of their problems. Labor-management committees are common, and they have been encouraged by the brotherhoods.

Basis of Union Wage Demands

In the West Coast region the unions have stressed external factors more than internal factors. Frequent reference has been made to comparable wage rates on the Pacific Coast, with particular stress on the lumber industry. The cost of living argument has been in constant play in conjunction with the spiraling of prices since the termination of the last World War. Ability to pay with reference to profits, increase in net worth, prospects for the future, and increased productivity have been used as talking points when the occasion warranted.

In respect to other sections of the country and in Canada, reference most frequently has been made to the cost of living, ability to pay, wage trends, productivity, general business conditions.

The unions have not advocated the tying of wages to the cost of living and productivity. Only a few contracts have included such provisions. Because of the fluctuating nature of consumer prices the unions believe that the workers will be more certain of their wage earnings without the cost of living escalator clause. However, they are given protection against the spiraling of living costs by their insistence on reopening clauses in their contracts within 30 days' notice. Their objections to a productivity clause are based on the belief that while benefiting workers in some companies, it would be disadvantageous for others. Under prosperous conditions there is a better opportunity for securing increases than would be permitted under the productivity clause.

On the whole, the brotherhoods have exercised an intelligent and mature wage policy during the last two decades. They realize that there is a limit to the amount they can secure. They expect management and the stockholders to receive a fair return. But they have never hesitated, after an examination of the facts, to demand their rightful share. They have endeavored to comprehend the company's and the industry's problems but in return they have expected that management be willing to understand the point of view of the workers.

COMMUNICATIONS

DEFICITS, SURPLUSES, AND NATIONAL INCOME: A COMMENT

In a recent article in this journal,[1] John G. Gurley examined "the efficacy of the fiscal prescription which advises the fiscal authorities to run a deficit if they wish to raise income, a surplus if they wish to lower it and a balanced budget if they wish to maintain it at current levels." The conclusions which Professor Gurley comes to are that the fiscal prescription is "theoretically untenable" and "the prescription's usefulness as a guide for fiscal action, in the majority of cases, is likely to be extremely limited." In this comment these two conclusions will be questioned as well as the general approach to fiscal policy via deficits and surpluses.

Professor Gurley starts by citing the attacks on the supposed neutrality of balanced budgets. These attacks consist essentially of pointing out that, if the level of the budget is raised or lowered even though balanced, the gross national product and national income will be correspondingly raised or lowered. The level of employment which is in part a function of the gross national product will also rise and fall with the level of the budget. The reason for this relationship is simply that subsumed under the definition of the gross national product and national income are the expenditures of government (excluding transfers). However, balanced budgets may be thought of as neutral if one is concerned with measuring the disposable income of the private sector. In a very simplified[2] sense one may say that as long as expenditures and tax receipts are changed in the same amount the private sector is left with the same disposable income. Ordinarily if we suppose an increase in the level of governmental expenditures we would deduce two sets of effects on the income of the economy. The first, or direct, effect would be to raise national income by the amount of the expenditures; the second, or indirect, effect through the familiar "multiplier" process will raise consumption and income further. If we suppose an increase in the level of tax receipts we would deduce a decrease in the disposable income of the private sector as a result, which then through the same "multiplier" process will lower consumption and income further. If we suppose the increase in expenditures and tax receipts to be equal the net effects will be as follows: national income and personal income will be raised by the expenditures, disposable income will be reduced in like amount by the taxes, the secondary "multiplier" effects which result from the changes in disposable income will cancel out since disposable income is unchanged. We are thus left with an increase in national income equal to the change in the level of the budget but no change in the disposable income of the private sector. Consequently we can say that the level of the

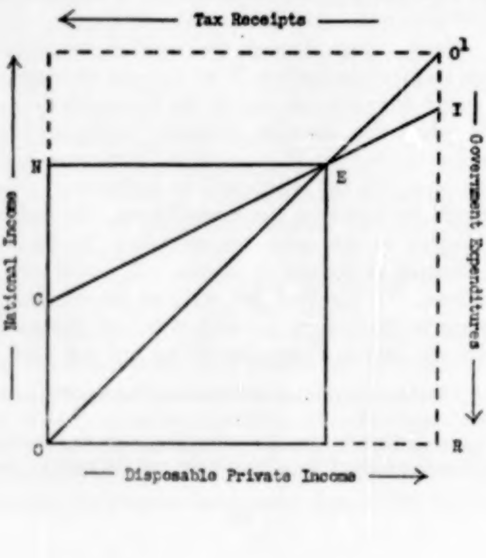
[1] John G. Gurley, "Deficits, Surpluses, and National Income," *Southern Economic Journal*, XXI (July 1954), pp. 15-25.

[2] The statement is simplified because it avoids completely any analysis of the source of the tax receipts or the character of the expenditures and the varying impacts which might result.

expenditure budget of government (even though balanced by tax receipts) is a determinant of the gross national product, national income, and employment.

Professor Gurley proceeds from this analysis to point out that the same line of reasoning which applies to balanced budgets applies to unbalanced budgets. Once one grants the explicit and implicit assumption of the analysis, then Gurley's statements that deficits exist which may be contractive and surpluses exist which may be expansive follow logically if not tautologically. An important assumption here is that one starts the analysis with some given positive amount of expenditures and tax receipts, in Gurley's case a balanced budget level as well. That a deficit exists which may be contractive results simply from the fact that a sufficient reduction in expenditures from the starting level would reduce national income more than an even larger reduction in taxes (creating the deficit) would raise national income. Conversely, that a surplus exists which may be expansive results simply from the fact that a sufficient increase in expenditures will create a greater expansive force raising national income than the contractive force of an even larger increase in taxes. These propositions, while applicable to national income, are, of course, not applicable to the disposable income of the private sector.

If one is interested in the conceptual problem of the effect of government expenditure and tax activity on income it might be well to start from an equilibrium position in which there were no government expenditures or taxes so that the economy was made up entirely of the private sector. In this case disposable income and national income are identical and the equilibrium level of income (ON) as shown in Gurley's Diagram 1 would be at the intersection of the CI curve with diagonal OO′. In this case, then, all government deficits are expansive; all balanced budgets are expansive and some surpluses (those between CI and OO′) are expansive. Only those surpluses sufficiently large (above CI) so that



the contractive force on income of tax collections outweighs the combined expansive effects of government expenditures *per se*, plus the secondary effects of the government expenditures, will be contractive. These propositions simply highlight the fact that a given level of government expenditures is a greater expansive force (generally speaking)[3] than the same level of tax collections is a contractive force.

A more general criticism may be made of any analysis which attempts to examine the income effects of "deficits" or "surpluses."[4] Deficits or surpluses are not positive forces in themselves but simply the result of the subtraction of cash receipts from cash disbursements or vice versa at any given period of time. The forces which produce income and employment effects are the expenditures of government and the tax collections made by government. The simple but important relationships are these: any expenditures by government regardless of amount (unless they simply supplant private expenditures) will have an expansive effect on income and employment; any tax collections by government withdraw potential purchasing power from the private sector and thus generally produce a contractive effect on income and employment; the precise effects depending upon the level and type of the expenditures and taxes and the reactions of the private sector to them. To analyze these effects by the use of deficits or surpluses obscures the real directions and impacts of these forces and the fact that these forces are opposing, one set expansive and the other contractive.

A given amount of tax collections will undoubtedly have quite different income effects depending upon the composite of taxes yielding the receipts. Similarly a given amount of governmental expenditures will have quite different income effects depending upon the nature and composition of the expenditures.[5] Obviously the indirect income effects of $1 billion of tax collections will not likely be equal (but of opposite sign) to the indirect income effects of $1 billion of expenditures. To aggregate these forces through the use of deficits or surpluses as an analytical tool precludes analysis of most of the significant effects.

In Gurley's geometric apparatus the differences in income effects which in reality are likely to occur in response to different types of tax and expenditure programs of the same magnitudes are assumed away by the implicit assumption that the private sector's propensity to spend (in the schedule sense) is independent of the tax and expenditure program, and that these programs affect only the amount of the disposable income.

Leaving the theoretical conceptual problems, let us examine the more funda-

[3] Apart from the qualifications noted below.

[4] This criticism is perhaps unjustified with respect to Gurley since he states that his paper deals only with the *pure* (italics mine) income effects of government budgets. Presumably the term pure means that we are not to be concerned with differences between the income effects of a variety of different tax measures and a variety of different expenditure programs of the same aggregate size, but are to assume the effects to be identical in amount but of different sign.

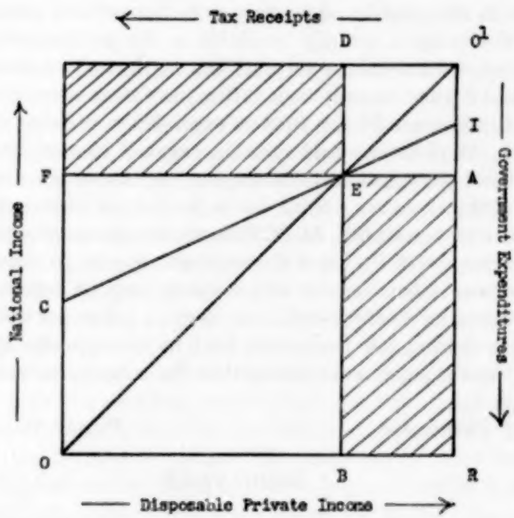
[5] See Harold M. Somers, *Public Finance and National Income*, (Philadelphia: Blakiston Company, 1949), Part VI, pp. 485–513, for an excellent discussion of the varied impacts of expenditure and tax programs.

mental challenge which Professor Gurley makes to the fiscal prescription; namely, that its usefulness is extremely limited. The conclusion appears to rest on the premise that this advice to politicians (those responsible for maintaining stability of income and purchasing power) is fraught with danger. The danger is that these politicians might select a deficit (surplus) which would contract (expand) rather than expand (contract) the economy. To determine the likelihood of this possibility we must understand more precisely what is meant by the prescription. When economists advise the running of a surplus (a larger surplus or smaller deficit than currently exists) it is rather like the advice my wife gives me to "slow down" when I am driving my car at excessive speed. To reduce the speed of my car I have two opposing forces to deal with; the pressure I apply to the throttle and the pressure I apply to the brakes. I may, of course, release the pressure on the throttle or apply pressure to the brakes or both, depending upon how quickly I wish to decelerate. There are, of course, an infinite number of combinations of these two forces or pressures which will slow me down. It would even be possible for me to increase the pressure on the throttle and still slow down if I applied enough pressure to the brakes, but I should surely be judged an insane driver if I chose this method. However, it is this sort of combination that Gurley is worried about, for it is this type of surplus (resulting from the excess of additional tax pressure over *additional* expenditure pressure) which, while it slows down the private sector, so increases the government sector as to raise the national income and gross national product. But we should surely think the politicians to be insane drivers of the economy if they were to interpret our cautions in this way.[6] There are actually only three ways in which the fiscal prescription to run a surplus can be realistically interpreted: as a recommendation to increase tax receipts, to reduce expenditures (from what they otherwise would be) or both. The fourth way of interpretation, to increase expenditures and tax receipts more, exists only in Gurley's diagrams, a theoretical concept but completely unrealistic in the face of an accepted goal of stability.

The same criticism applies to Gurley's conclusions about the prescription to run a deficit (*i.e.*, a larger deficit or smaller surplus). Under such conditions no one would expect the politicians to decrease the level of government expenditures, which would be necessary for the economy to contract as a result of the deficit policy.

Professor Gurley examines an approach of incorporating economic theory with political possibilities, suggesting that this is a promising solution to the salvation of the fiscal prescription. He suggests that "there are definite political limits both upper and lower, to expenditures and receipts." Within the limits he assumes, there is apparently perfect freedom to move to any budget level, balanced or otherwise. The difficulty with this approach is that it assumes that expenditure budgets and tax programs and the resulting deficits or surpluses are approached

[6] One can conceive of situations in which, for non-economic reasons such as national defense or war, government expenditures might be increased even though unstabilizing, but these are beyond the scope of the fiscal prescription which is concerned with compensatory fiscal policy and stability.



by the government each fiscal year in an *ad hoc* fashion. However, budgets are not made up out of thin air but relate to the past year's rate of expenditures and existing tax structure. The fiscal prescription likewise relates to the current rates of expenditures and taxes. Thus, when R. A. Musgrave says: "If there is a need for checking inflation, the deficit should be reduced or the surplus raised; if there is a need for checking deflation, the surplus should be reduced or the deficit be increased," he is presumably starting from existing rates of expenditures and tax receipts which happen to yield a given surplus or deficit. He proceeds in the next paragraph of his paper to state that "the required compensatory effect may be accomplished by *acting upon the level of public expenditures or the level of tax rates*."[7] He further states explicitly, "Similarly, inflation may be met either by *lowering expenditures or raising tax rates*." It seems obvious that the fiscal prescription in this context could not lead to the wrong results.

Similarly, Professor Samuelson appears to be unequivocal when he states, "When private investment shoots up too high, it seems natural to ask that the government should try to compensate by *curtailing* public investment and expenditures and *increasing* its tax collections."[8]

There are definite political limits to the expenditure and tax receipts which may be chosen by the government in its *attempt to stabilize the economy* but they are not those suggested by Gurley's assumptions. A more realistic assumption of political behavior would result in the following. Using Gurley's analytical frame-

[7] Richard A. Musgrave, "Fiscal Policy in Prosperity and Depression," *American Economic Review, Papers and Proceedings*, XXXVIII, No. 2 (May 1948), p. 383. Italics mine.

[8] Paul A. Samuelson, *Economics, An Introductory Analysis*, 2nd edition, (New York: McGraw-Hill Book Company, 1951), p. 395. Italics mine.

work as shown in Diagram 4 and starting as he does with a currently balanced budget at E, the budgets actually available to the government which fit the fiscal prescription of "a deficit or surplus" can be shown as follows. Those lying within the area AEB are the only ones fitting the deficit prescription since they all involve either increase in the current expenditure rates or decrease in tax receipts or both. All of these would raise the national income. The only budgets which fit the fiscal prescription of "a surplus" are those lying within the area DEF since all of these involve a reduction in the current rate of expenditures, an increase in tax receipts, or both. All of these would contract the national income.

If the major purpose of Professor Gurley's article were to caution economists about the looseness of fiscal advice which speaks only of deficits and surpluses without reference to levels of expenditures, then his points are well taken but not new. But as for fearing lest the advice lead in the opposite direction to the desired goals, there is much more to fear that the economists' advice will not be followed at all.

University of Washington PHILIP W. CARTWRIGHT

A REJOINDER

Given the private sector's propensity to spend out of disposable income, the level of national income is a function of the size of the government's deficit or surplus and the level of government expenditures. With the size of the deficit (or surplus) given, the higher the level of government expenditures the higher will be the level of national income. With the level of these expenditures given, the larger the deficit or the smaller the surplus the higher will be the level of national income. Therefore, given the propensity to spend of the private sector, a government surplus may be associated with a relatively high or low income level. The same is true with respect to government deficits. The mere existence of a government surplus or deficit tells us little or nothing about the accompanying level of national income, even though we know the private propensities.[1]

It is also true that a *marginal* surplus or deficit, reflecting a *change* of taxes and expenditures, may either raise, lower, or maintain the level of national income. The outcome depends on the size of the marginal budget and on the change of government expenditures. For example, a marginal surplus of modest proportions which moves the budget to a much higher level of government expenditures will

[1] These propositions are subject to all the qualifications mentioned by Professor Cartwright and me.

To reach these results, it was not necessary for me to "start" with a balanced budget and some positive level of expenditures and receipts, as Cartwright seems to believe. The analysis is comparative statics. A certain budget, given the private sector's propensity to spend, is compatible with a certain national income level; another budget is compatible with another income level; and so on. Consequently, I fail to understand the critical content of Cartwright's statements which relate to his initial diagram.

I am aware that the balanced-budget propositions do not apply to the disposable income of the private sector. Since the title of my article contained the word "national," and not "disposable," I must assume that Cartwright's remarks on this point do not constitute a criticism.

probably raise the level of national income. A similar statement may be made about a marginal deficit.

Therefore, the private propensities and the size (the difference between expenditures and receipts) of the government's *current* budget are insufficient to determine the current (equilibrium) level of national income. The private propensities and the size of the government's *marginal* budget are insufficient to determine the direction of movement of national income.

Now what danger is there in the statement, considering only a part of the fiscal prescription, that a government surplus is deflationary? Or that the government should run a surplus in "inflationary" or "good" times? Professor Cartwright, in effect, claims that there is little or no danger because by "surplus" economists mean "marginal surplus" and by the latter term they mean raising taxes, lowering expenditures, or both. This type of marginal surplus, by either maintaining or lowering government expeditures, is certain to lower the level of national income. Only a marginal surplus that involves a substantial increase of government expenditures is likely to raise national income, and this is ruled out by Cartwright as politically unrealistic. He chides me for being worried over the possibility of this last action. But it is clear in my article that I discounted this possibility,[2] and that I was in fact concerned about another aspect of the fiscal advice, an aspect that Cartwright has chosen to slight.

My article was based on the assumption that many economists have stated or implied that deflationary pressure is exerted on the economy if the government *currently* has a surplus. (And inflationary pressure, if there is currently a deficit). After some rechecking, prompted by Cartwright's comments, I am still convinced that this assumption is correct. I can only ask the reader to check it for himself, and to note carefully the many statements concerning the reduction of the public debt at such times. It is not possible to reduce the public debt with a marginal surplus if it still leaves the budget within the range of current deficits. What is being advoctated, I conclude, is that the government, after all moves have been made, should end up with a current budget surplus so that the debt may be reduced. The advice implies that a currently-run government surplus has deflationary income effects, and for that reason it is highly misleading.[3] It is so misleading that the advisees may sit tight with a government surplus that, given the private propensities, is compatible with an inflationary income level. On the other side, it is so misleading that the advisees may sit tight with a government deficit that is compatible with an income level far below that of full

[2] "Deficits, Surpluses, and National Income," *Southern Economic Journal*, XXI (July 1954), p. 23.

[3] The ridiculousness of the implication is shown by noting that it is the same as saying that deflationary pressures exist if the private sector currently has a deficit—for, of course, this sector must have a deficit equivalent to the surplus of the government sector. An equilibrium income level exists when the planned surplus is equal to the planned deficit, and for this purpose it does not matter which sector has the surplus and which the deficit. Inflationary pressure on income is exerted when the planned deficit exceeds the planned surplus. The opposite is true for deflationary pressure. And again, for these purposes, the identification of the surplus or deficit sector is unimportant.

employment. Or, worse yet, they may attempt to eliminate the deficit because "government deficits are inflationary." Thus, the danger is that no move at all, or moves in the wrong direction, will be made due to faulty notions about the level of national income compatible with the current budget.

Professor Cartwright completely misses this point in his automobile example. Adapting the fiscal advice to the automobile example, we have: for a slower-moving automobile, run a surplus of brake-pressure over throttle-pressure. But since, following Cartwright's and my assumption, a given amount of throttle-pressure has more effect on speed than the same amount of brake-pressure, the automobile may be moving at an excessive speed, or accelerating to that level, even though there is a "current surplus." The reason, of course, is that the throttle-pressure may be currently at a high level. The danger in this is apparent. The driver, believing that he is following the advice to the letter, may maintain his "current surplus" until he and the automobile catapault over the side of a cliff. If the driver knew his present speed was excessive, or would soon be excessive, he would undoubtedly make the right moves, as Cartwright states. However, the advice is so loose that he may see no danger at all in the present situation. In fact, if he believes that the current surplus is deflationary, he may decide to release brake-pressure in order to reach a "balanced budget." If so, the driver's move is just the opposite of those that Cartwright claims the driver is bound to make.

Finally, I should like to urge Professor Cartwright to reconsider the surplus-deficit method, when correctly used, for national income analysis. A surplus on income and product account is an excess of saving over investment for that sector. A deficit is the opposite. Therefore, one can say that national income is at an equilibrium level if the planned surplus equals the planned deficit. Cartwright believes that this formulation obscures income analysis, but it is firmly based on the saving-investment formulation. It has the added advantage of permitting financial accounts to be woven into the "real" accounts. A surplus sector accumulates net financial assets, while a deficit sector accumulates net debt, including equities. The accumulation of financial assets and debt is the counterpart to surpluses and deficits on income and product account. Rather than obscuring analysis, this formulation would appear to open up the "financial side" in the same way that growth models have opened up the "real side."

University of Maryland JOHN G. GURLEY

BOOK REVIEWS

A Critique of Socioeconomic Goals. By Henry M. Oliver, Jr. Bloomington, Ind.: Indiana University Press, 1954. Pp. vii, 191. Paper, $2.50; cloth $3.00.

Here, for the first time by an economist, is a book devoted solely to the discussion of socioeconomic ends. While economics may treat primarily the use of means, the economist can hardly profess to be effective in his purpose unless he has some understanding of the values, myths, and goals which the people of a nation hold before him. To this understanding the author makes a truly notable contribution.

Only those goals which "have been suggested as guides to state action" are analyzed. They include: natural and legal liberty, distribution according to earnings, equality, maximum satisfaction, status, and a miscellany on solidarity aims, national unity, military strength, deterministic or evolutionary ends, cultural ends, and so on. The analysis of each goal usually follows a given procedure: first, the ambiguities and underlying assumptions are brought out; and, second, the goals so dissected are examined as to their implications for governmental policy. This procedure on occasion may be inverted but the two steps are generally involved.

Each goal is investigated with such rigorousness that the reviewer can only envy the accomplishment but can never hope to achieve it. Brilliant analysis is especially accorded the criteria of equality and maximum satisfaction. But any detailed description of either the method, results, or the extent to which the author penetrates into meanings is impossible.

Naturally, the analysis cannot effectively pursue the traditional patterns of economic method. Instead the author seeks to examine the possible modes of behavior and conduct resulting from the acceptance of the varied interpretations of the goals. Through the application of political and sociological assumptions the motives behind the acceptance of them are also given a place in the argument. Prejudices and credos which affect public policy are thus for the first time broadly explored by an economist.

The author disciplines the writers on the new-welfare economics on a point which should stir anew the debate that has laid dormant for the last year or two. He is positive that the new-welfare economics unreflectingly preaches status. This conclusion is supported by an ably written chapter on the subject. In it he argues that goals implying the preservation of status are not consistent with the ends of "a modern dynamic economy" and, therefore, are not "feasible" criteria of economic justice. (Presumably he finds some support for making interpersonal utility comparisons in the evaluation of the criteria.)

On the other hand, he derides the belief that the dangers of cumulative governmental intervention are great in America, that they must necessarily lead to complete collectivization. He is convinced that "... American democracy, like British and Scandinavian democracy, seems healthy enough to survive much more substantial doses of state economic controls" than those to which the

nation is now exposed. Both explicit and implicit in his argument is the belief that without a fairly significant degree of "collective behavior" individual economic action may find going difficult.

To this position the reviewer has but one reaction; he believes that there is still a good possibility that America can yet be swept into a relatively complete collectivity for which one or two dominant economic groups may set the pattern. As the author and others who cling to this view seem to believe, there is no conclusive evidence that the counter-balancing processes operating among the several economic groups of our present-day economy are fully adequate to prevent complete acquisition of power by some. While many Americans point to the social experiments in Scandinavia for their support of further governmental intervention the reviewer cannot be fully receptive to that kind of evidence. Indeed, not long ago a well-known Swedish economist observed to the reviewer that America has travelled farther on the road towards complete collectivization than has Sweden; and he was deeply concerned that it "might go the whole hog." Suffice it to say here, a world of shadows is entered the moment the debate on such issues is reassumed; the argument on either side rests more on romanticism than on logic.

Emory University ERNST W. SWANSON

The Law of Freedom as the Remedy for War and Poverty. By Emil Korner. Translated from the German by H. Leigh Farnell. Two Volumes. London: Williams & Norgate, 1951. Pp. xxiii, 562, 663. 42s.

In an introduction to Volume I of this work Professor Alfred Amonn describes the work under review as in the liberalistic tradition, though not in that associated with the names of Roepke, Hayek, and Mises. For Korner does not believe that a freely competitive system can generate stability and full employment if the prevailing institutional framework is unsatisfactory, as is that usually encountered. Free competition and laissez-faire can give rise to stability and full employment only if a society's basic institutions—its monetary system, working time, wage rates, limitations upon freedom, etc.—are appropriate. If they are not, their reform is indicated. We are presented, therefore, with a "positive" theory of laissez-faire, though without reference or adherence to the ideas of the late Henry Simons and his followers. Needless to say, Korner is unsympathetic with Keynesian interventionism, with Marxism, and with much that passes for Anti-Marxism.

An economy subject to the "law of freedom" apparently can function successfully only in a World State, presumably to be established by a World-State Party whose members are sworn to the law of freedom. Such a World State presupposes the disappearance of the national state, together with man's belief therein, and hence the abolition of war. The law of freedom implies the operation of the golden rule, or the presence of a set of conditions under which the arbitrary wills of individuals are brought into harmony. This law also implies freely moving prices, the use of unskilled labor as the basis of the standard of value, etc. And so on.

Graphs and symbols are not to be encountered in the two volumes. Aristotle, Goethe, Nietsche, Schopenhauer, and Spinoza are cited more frequently than are Marshall and Pareto and nearly as frequently as Marx, Mill, Mises, and Smith. Almost no contemporary economists are cited. Had the author said what he has to say in far fewer words, the impact of what he has to say almost certainly would be greater than it is likely to be under present conditions.

Duke University JOSEPH J. SPENGLER

The Economics of Recession and Revival: An Interpretation of 1937–38. By Kenneth D. Roose. New Haven: Yale University Press, 1954. Pp. xii, 280. $4.00.

Here is a welcome addition to the literature on the history of business cycles. Roose has already published the best of his book in four journal articles, but it is helpful to have a fuller account. Of the previously unpublished material, chapters 8 and 9 on price-cost relationships and monopoly factors struck me as the most interesting.

The book cries out for a full-length review article, as much on account of its limitations as its merits. Without pretending that I could have done as well as Roose, his effort seems to me not the kind which is definitive and therefore inhibits further work on the subject; it is rather the kind which opens up the subject and invites others to build upon it. This is particularly the case since, as Roose says, conclusions are a matter of opinion in this kind of work; and another interpretation seems to me more plausible than his. (Unfortunately, Roose has not presented the statistical data in a way which facilitates forming one's own opinion without repeating much of the digging Roose had to do; there are too few charts; and there is too much presentation, as in chapter 3, of just so much of the data as suits Roose's purpose.) At numerous points in the analysis Roose does not make clear the whole of the model which seems to underlie his statements: one is tempted to try to supply the deficiency.

And there are numerous omissions. Roose is preoccupied with the turning points and does not inquire why the 1937–38 downswing was the most violent for its length in American history. He discusses price-cost relationships before the downturn but not afterwards. I did not notice and could not find in the index any reference to the quantity of money. His concluding chapter, which purports "to test business cycle theory by empirical means" (p. 242) does not name a single business cycle theorist whose theory is consistent with or disproved by the data; nor can I see how he could have tested any theory without employing the distinction between exogenous and endogenous factors, a distinction he does not appear to make at all.

Roose deals with two chief questions: why did private long-range investment fail to revive during 1933–37? and what caused the recession of 1937–38? The two are interrelated inasmuch as the recession, however caused, presumably could not have occurred had such investment revived. On the first question, Roose decides against the mature economy thesis and in favor of blaming anticapitalist policies of the New Deal. By paying scarcely any attention to it, he damns the third hypothesis, namely, that the downswing of 1929–33 with its

unprecedented depth gave an unprecedented blow to business confidence, created an unprecedented amount of excess capacity, through its international repercussions prevented foreign lending from reviving, and by cutting the marriage and birth rates checked the normal growth of demand for housing. The three hypotheses are not mutually exclusive. My ranking of their importance is just the opposite of that implied by Roose.

Given the fact that long-range investment was depressed, what caused the recession of 1937–38? Roose attributes the result to three main factors. The most important in his view was the encroachment of costs (especially labor costs) on profits, which reduced the profitability of investment. I am not clear which of the other two—balancing of the federal budget and increased reserve requirements for member banks—Roose regards as more important. He discounts the decline in net income-increasing expenditures by the federal government on grounds of timing. Since the decline in amount of security flotations, which Roose blames on increased reserve requirements, had about the same timing and was considerably smaller in size according to the figures Roose gives, I infer that fiscal policy was more important.

I am a bit skeptical of this analysis. The reasoning which led Roose to discount fiscal policy does not seem convincing to me, and he does not seem to have taken proper account of the extent to which budget balancing resulted from taxes on employers—and therefore affected profits. Such taxes in the long-run undoubtedly get shifted to the workers, but the method of shifting requires that first profits decline, then investment, and finally employment in consumers' goods industries—just the sequence described by Roose as occurring in 1937.

Vanderbilt University RENDIGS FELS

Income Redistribution and Social Policy. Edited by Alan T. Peacock. New York: Macmillan Co., 1954. Pp. 296. $5.00.

This book is made up primarily of five papers concerned mainly with an investigation of the nature and magnitude of the redistribution of incomes brought about by social policies in Denmark, France, the United Kingdom, United States and the underdeveloped areas. There are, as well, two papers on theory.

Mr. Harry Johnson's paper is a much less mathematical treatment of the argument he first advanced in *Economica*, May 1952. Following the work of Duesenberry and Modigliani on the nature of consumers' tastes, Mr. Johnson is concerned with asking how these tastes, if not independent of one another, can affect income redistribution. He introduces two new tools, the interdependence multiplier and the reaction coefficient, and employs them in analyzing such a problem. He finds, consistent with the conclusions reached by the welfare economists, that a redistribution of income from richer to poorer, may lower rather than raise the aggregate consumption out of a given income.

Mr. D. Berry's paper on Welfare Analysis is devoted to an examination of the direct vs. indirect tax controversy, which has occupied so much space recently in the Journals. So far as he goes, he gives a competent and interesting review of what has been and is being said. But the more important question of

how welfare judgments about social policies are to be made is relegated to a footnote on the compensation principle. In such a collection of papers, it would seem that if welfare is to be mentioned at all, this question deserves fuller discussion.

The five empirical studies are often path-breaking, but very uneven in quality and length. The studies on France and Denmark give useful descriptions of political, social and economic data, and emphasize again the interconnectedness of economics and the conflict of power and pressure actions. Both studies would appear to be pioneering in the analysis of data, but the methods of analysis used are crude, as the authors freely admit.

Perhaps the most successful study is that of Mr. Alan Peacock and Mr. P. R. Browning. The text is concise, illuminating and the study limits itself to particular aspects of British income redistribution policy. They, in particular, question the commonly accepted view that post-war redistribution in the United Kingdom has been horizontal rather than vertical. Their challenge lies in attributing to the different classes that part of the government's receipts which is spent on the social services and comparing this with the benefits received. The result is a substantial redistribution of income in favor of the lowest income group.

Mr. Alfred Conrad's paper on the United States is guilty of treating in length subjects like national income accounting and government means of redistribution, which are found in any good text. His paper comprises one-third of the book, and begins with what is surely an unnecessary display of arithmetic and jargon. His data on distribution for 1938–9 and 1950 are illuminating, though nowhere is an account given of how the data on Redistributed Income is realized (table 1, column 7, page 197).

Mr. T. B. Lim's paper on Underdeveloped Territories devotes almost half of its length to a recapitulation of American and European data, and he limits himself by making unsupported judgments about taxes and revenues. His problem is made difficult by the paucity of data, but it seems that most of the income redistribution in these areas can be described as horizontal rather than vertical.

A preliminary statement by the editor on what questions each contributor was asked to answer would have improved the reading quality of this book. At times, the papers are so disparate as to leave the reader wondering what they have in common. Finally, a concluding statement on the significance of these papers, taken as a whole, would suggest areas of agreement and problems requiring future investigation.

University of North Carolina PETER SINCLAIR

Property, Profits, and People. By Thurman Andrew. Washington, D. C.: Progress Press, 1954. Pp. 242. $3.75.

Writers who attempt to mix together ingredients such as people, property, profits, money, and human motivation clearly hope to scale the irreverent walls of ignorance that surround social science. The depth of the task is so abysmal, the knowledge required so great, and the philosophic orientation needed by the author so awesome as to cause one to ponder why so many undertake the job in

full recognition of the barriers to success. The difficulty with many such efforts is that the authors become bogged down in a morass of doubtful opinion and clouded vision because of the vigor with which they have formulated and then espoused certain political, economic, and social relationships.

Mr. Andrew is concerned with the returns to land, labor, capital, and management. He claims that his book is a social and political treatise; that "It is not economic law that condemns us to unemployment and depressions; it is political laws, man-made laws, that are contrary to the principles of economic welfare" (p. 4). He claims that, "Whatever may be said about classes, there are none nearly so distinct and important as the owners and workers" (p. 6). He opines that the only class compelled to sell itself in order to gain access to productive facilities is the working class (p. 6). His plan to remove the tacit implications of inequality between the social, economic, and political foundations of the working class and owners is to enable "every worker (to) own the tools with which he works. Then every worker would be a capitalist and every capitalist would be a worker" (p. 6).

Mr. Andrew states that the method of change-over from the profit economy to what he calls the "possession-for-use system" would require a long time if it is to be effected in a peaceable manner. He recommends the enactment of four laws that are basic and essential to the functioning of the system (pp. 145–48). (1) The final wage for each type of job is to be determined by competition. (2) The prices of all goods and services are to be based on the average cost of production and distribution. (3) All capital goods are to be transferred to the workers who use them. (4) All workers are to be entitled to a job for which they are qualified, and to the rate of wages determined for the job at the standard of efficiency attained.

In our present "profit" system it is the function of prices to allocate resources and ration goods and services. Presumably a plant manager will hire production factors as long as the marginal revenue product is a plus quantity. Admittedly, other criteria may be devised to take the place of the marginal productivity principle as a means of distribution. Government control, albeit through legal changes, as recommended by Mr. Andrew is one way. Another way would be to make payments to individuals on the basis of their political views; or on the basis of some index of levels of livings or need.

Any economic system must find some means of allocating resources. An accounting method of some kind must be devised to indicate the relative marginal social product of resources. This is as true under capitalism as it is of communism, socialism, or fascism.

The underlying assumption in Mr. Andrew's work that, because people attempt to make profits they necessarily must seal off all other considerations within a tightly closed cylinder of the mind, does not seem to be relevant to American capitalism. A close look at the nonmonetary motivation of present day businessmen reveals that there are numerous ways in which the businessman reacts to human, social stimuli in opposition to monetary considerations. And, it is doubtful (to cite the rather recent examples of Germany, Italy, the Soviet

Union, and China) whether government establishments are a better decision making body than private individuals and groups if our major interest is protecting individual initiative and development.

University of South Carolina ROBERT W. PATERSON

Monopoly and Competition in Banking. By David A. Alhadeff. Berkeley: University of California Press, 1954. Pp. x, 254. $4.50.

This book applies recently developed theories of imperfect competition to commercial banking, particularly to California. Previous studies of banking concentration were prepared without the aid of the analytical tools brought to bear by the author. The analysis and findings are not limited to the California case. The book may be regarded either as a study of banking structure by means of up-to-date theoretical methods or as a study of the adequacy of these tools to deal with practical problems of the real world. Both theorists and specialists in money and banking can study this book with profit. Both will find that they have more work to do.

Statistical data used in this investigation are drawn primarily from California banking, and some material from the Transamerica case is brought to bear. It is frankly admitted that information on rates charged to bank customers is not adequate. As may be expected the data do not permit drawing the smooth curves of the theorist. Indeed the author does not try to draw curves. He uses his data with circumspection, admits their shortcomings, and does not shirk pointing out instances where hypotheses do not seem to be supported.

In the middle of the book there is a substantial section on relationships between open-market rates and customer rates. The author considers the Federal Reserve's ability to influence customer loan rates via the reluctance principle, which comes in for some vigorous questioning. The prime loan rate, that little known creature of the money market, is discussed informatively. This section of the book will be welcomed by those who are aware that the money market studies of a generation ago are no longer adequate.

Analysis of the pricing practices of banks, which operate within a unique pattern of imperfect competition, is made especially difficult by large elements of joint and common costs as well as by the complex nature of the product produced by commerical banks. Inputs and outputs are not the simple things they are in the models of the economic theorist. Freedom of entry turns out to be a thorny matter. Even if the reader may at times get the feeling that the author has tried too literally to apply the theorist's devices, there can be no denying that the author has used skill and ingenuity in his task. Possibly more attention should have been given to spatial aspects of imperfect competition theory, but possibly this would not have been fruitful.

The findings are stated clearly and judiciously. It is to be hoped that the appearance of this book will stimulate further interest in studies of the performance of the banking system, which should in no wise be regarded as an ideally functioning mechanism for allocation of capital among alternative competing uses.

Duke University EDWARD C. SIMMONS

Private Credit and Public Debt. By Anatol Murad. Washington, D. C.: Public Affairs Press, 1954. Pp. vi, 195. $3.75.

Professor Murad's careful analysis sheds more light on the increasingly mystifying problems of the public debt than any other treatise on the subject known to this reviewer. After stating in a series of succinctly written chapters his premises, which reexamine every facet of the problem from the beginning, he builds with seemingly relentless logic a structure that will prove fascinating to all, provocative to most, new to many, and disturbing to perhaps quite a few.

One of his basic propositions refers to man's desire to become the recipient of income without working. In a capitalist society, this can be accomplished through the acquisition of securities. Securities, on the other hand, can in a normally functioning private economy by offered on the market only as long as that economy expands, for only in an expanding economy is there a continuous need for new capital (active capital). However, the very expansion of an economy must, at first, lead to a slowing down of its growth and, ultimately, to a complete stoppage. This happens when development reaches a level at which all available labor resources are utilized in manning and maintaining existing equipment, and new capital building becomes an impossibility simply because the supply of labor is exhausted.

But unexhausted remains the desire for income without working and, with it, the demand for securities. Since, in line with Murad's *theory of diminishing net investment*, the capitalist economy can no longer meet this demand, the government must come to its assistance and create new securities. This means that, once the capitalist system has developed to full maturity, the government of a capitalist country no longer incurs debt in order to get funds, as is still maintained by most analysts. It incurs debt in order to satisfy the demand of its citizens for securities. But these government supplied securities are of a different kind from those that previously arose from net investment. In contrast to the latter, they are offered without a corresponding production. They are *consumption* securities.

This being the case, the question arises as to how long government can continue to increase its debt in order to provide securities granting income not only obtained without work but paid without production. Many fears customarily associated with the nightmare of a rising public debt are discounted by Murad. He shows that a government endowed with the sovereign right to create legal tender cannot go bankrupt. Nor would it have reason to repudiate its debt or to resort to confiscatory taxation in order to cope with the rising burden of interest payments. And even the problem of inflation could be controlled.

The real end of this particular kind of debt operations of the government and, with it, of the capitalist system which these operations were meant to save, may be brought about by the inexorable decline of the interest rate resulting from the necessity of distributing the available consumable product amongst an increasing number of security holders in the absence of a compensating increase of production. This will ultimately lead to the impossibility of obtaining income without work and, therefore, necessitate the rearrangement of social goals and institutions.

There are certain flaws in Professor Murad's exposition. Though he furnishes a new interest theory of considerably greater realism than Keynes' liquidity preference theory, its formulation leaves some ambiguities. Interest is shown to be the price paid to compensate banks for their *services*. It is thus "income from working." At the same time, interest by non-bank security holders is shown to be "income without working." Which is it? Both? If so, the apparent contradiction is not fully resolved. Elsewhere, in order to support his theory of diminishing investment, he uses only pre-World War II figures. It seems figures from the postwar period, during which investments have reached all time highs, might have been more revealing.

However, such inevitable shortcomings are more than compensated by the virtues of Professor Murad's book. He gives a fresh approach to the subjects of credit, currency, money, and banking, sweeping away a great deal of deadwood that has impeded a clearer understanding in the past. His composition and style are superb, and his development so lucid that even a non-economist should be able to follow the argument with ease, and increase his understanding of a vital problem even if he should not be willing to accept Murad's seemingly irrefutable conclusions. The book's central theory of diminishing net investment is clearly stated and used as a powerful tool with which to unravel the mysterious and disturbing terminus to which continued growth must ultimately lead. It all adds up to a theory of the disintegration of capitalism whose provocative nature and scientific basis may in time command as much attention as the theories of Karl Marx. Of the maze of books having come off the presses these past years, this is one of the few which will instruct and enrich even the most hardened reader.

Rutgers University LEOPOLD KOHR

An International Economic System. By J. J. Polak. Chicago: University of Chicago Press, 1953. Pp. viii, 179. $4.75.

This promising study by an econometrician presents a model which is then tested by statistics on the dynamic interactions of 25 national economies during the interwar years. The underlying theory is quite simple. 1. A nation's exports influence its income via the foreign trade multiplier. 2. A nation's income influences the level of its imports. 3. Since total imports of all nations equals the volume of world trade, the circle is closed by treating each nation's exports as a function of world trade (rather than of world income).

Exports, imports, and national income are endogenous variables in a world equilibrium system. The exogenous shocks which keep the system in motion are fluctuations owing to the effect of autonomous investment and government finance on income and the direct effect on imports of crop fluctuations and changes in commercial policy. The author's treatment emphasizes the world system as a transmitter of cyclical fluctuations.

Artificial restrictions appear to have reduced the propensity to import in the interwar years. But such autonomous changes have the same effect on income as an autonomous increase in exports. "In many countries the effect of import restrictions may have been much more to increase income at a given level of

imports than actually to restrict the volume of imports itself" (p. 58). Relative prices influence the distribution of world trade but have only second order effects on the total volume of trade. Not much significance is attributed to the price coefficients in this study because the statistical data are not adequate for dealing precisely with the influence of changes in relative prices.

The correlation coefficients offer some basis for believing that the highly simplified model incorporates the main outlines of reality during the interwar years. But coefficients for the various relationships often differ substantially between the 1920's and 1930's and cannot be applied directly to the present world without further modification. The statistics indicate little evidence of lags. Elasticity of demand with respect to income is twice as great for trade in manufactured goods as for trade in primary products. Most surprising perhaps is the finding that the relationship between imports and national income is not very good even after allowance for price factors.

For most countries, trade with the outside world overshadowed domestic investment and government finance as prime movers in determining the level of national income. Owing to its size, reserves, and volatility, the American economy was a major source of instability in the world system. The multiplier effect in world trade indicates that an initial autonomous change in imports would lead to a further change of equal magnitude. Using a multiplier of 2 to estimate the influence of the American economy on the decline in world trade from 1929 to 1932, slightly less than one-half of the decline can be attributed to the fall of American commodity imports and somewhat more than one-tenth can be attributed to the reduced outflow of American capital. In sum, this approach attributes about three-fifths of the total decline in world trade to the influence of the American economy which would mean that a minor part of the decline was owing to restrictions on imports.

Duke University D. D. HUMPHREY

Foreign Exchange in the Postwar World. By Raymond F. Mikesell. New York: Twentieth Century Fund, 1954. Pp. xv, 658. $5.00.

This capacious volume represents an important contribution to the postwar literature of international economics. Economists concerned with the intricacies of exchange rate practices will be unanimous in acclaiming a scholarly job of factual presentation. While it is doubtful that the policy espousals of Professor Mikesell will receive unanimous approval, in most cases both sides of controversial issues are presented. However, this reviewer has the feeling that despite an attempt to retain scientific objectivity, the author brought a rather strong bias to his work.

The purpose of the book, as stated in the author's preface, "is to provide a better understanding of foreign exchange practices and policies since World War II" (p. vii). Judged in the light of this avowed objective, the book is completely successful, and may be classed with Ragnar Nurkse's *International Currency Experience* as a major contribution. Mikesell is to the postwar period as Nurkse is to the interwar period.

The book is divided into four parts. Part I ("The Emerging Pattern of Postwar Payments Practices") provides a brief summary of prewar and postwar currency problems and indicates some of the steps taken to meet balance of payments disequilibria during and immediately following World War II. Part II ("The Fundamental Payments Mechanism") consists of a classification and discussion of exchange control schemes. Here the author discusses and evaluates the use of such practices as bilateral trade agreements, the European Payments Union, devaluation, multiple exchange rates, cost, and quantitative controls. In Part III ("The Countries and Monetary Areas") Professor Mikesell discusses the exchange practices of all currency areas. In these sections, the chapter on "Unofficial Transactions" (Chapter 9) and the discussion of the conditions surrounding devaluation (pp. 136–151) are particularly well done. Any criticism of the first three parts of the book must be based on omissions rather than on significant errors. In this connection a minor disappointment centers around the persistent tendency on the part of international economists, Mikesell among them, to talk of the effects of bilateral trade agreements without introducing any statistical findings to show that a reduction in multilateral trade has in fact been the result of such policies. A more serious omission is in connection with his discussion of the beneficial effects of anti-inflationary policy on the balance of payments in certain countries. Since one of the major contributions to international trade theory in the last 25 years is the recognition that the maintenance of balance of payments stability may impose a heavy burden on domestic stability, one would expect Professor Mikesell to examine the domestic employment situation supplementary to consideration of the impact on the balance of payments of higher central bank rates and other deflationary devices. Instead, the discussion of the problems of Norway, the Netherlands, Denmark, and Greece implies that all will go well if a country only has the courage to apply the brakes to inflation. But what happened to employment in the 1950–1952 period when deflationary policies were pursued? Figures cited in the International Monetary Fund, *International Financial Statistics* (February 1954) show an increase in unemployment in the Netherlands from 57.2 thousand in 1950 to 104.3 thousand in 1952. In Denmark the per cent of union membership unemployed jumped from 8.7 in 1950 to 12.5 in 1952; and in Norway unemployment increased from 9.0 thousand in 1950 to 11.6 thousand in 1952. No figures are available for Greece. It is true that in each of these time periods the countries mentioned reduced their balance of payment deficits and/or reduced their positions as EPU debtors. This reviewer does not wish to suggest without further study that the only cause of increased unemployment in these countries was deflationary monetary and fiscal policies aimed at balance of payments equilibrium, but he does feel failure to consider the employment question (in Chapters 12 and 13 in particular) is a fundamental shortcoming.

This question raises the issue of the whole range of policy recommendations with which the volume is concerned, for the scope of the book is broader than that indicated in the preface—"a better understanding of . . . practices and policies since World War II." Part IV is oriented toward the *future* and is entitled

"International Currency Problems." A major conclusion of the study seems to be that "trade discrimination and exchange restrictions on current transactions are not only economically harmful, but they are responsible for a misallocation of resources which the free world can ill afford if it is to defend itself against internal and external aggression" (p. 532). Few would disagree; but how many would agree completely with the author's proposals? He points out that the Iron Curtain countries have an organized and unified plan of international economic relationships, while the free world trading system is extremely complex. He then states, "the free world cannot compete with the Soviet sphere in this struggle for world power without some kind of an organizing principle. In the absence of political unification the principal coordinating force available to the free world economy is the operation of unfettered markets for goods and capital. In the broadest sense therefore the defense of the free world and its institutions depends upon the creation of a payments mechanism which will permit the unrestricted operation of these market forces" (p. 523). Is it necessary or desirable to go from one extreme, a complex exchange control system, to the other extreme of fluctuating exchange rates? While the author hedges on this issue, not quite sure of his own advice, this does appear to be one of his major recommendations. If so, it is one with which many will disagree. Have we not yet learned that completely free markets are most appropriate to simple economic systems, and that complex trade relationships may require some interference in the market mechanism? Other policy questions discussed are equally controversial—the scarce currency provisions of the IMF charter, the preconditions of convertibility, and an evaluation of the Marshall Plan.

The tone of this review is not intended to be overly critical. On the whole, one must conclude that this is an excellent reference work, one which deserves a place on the shelves of every economist interested in the problems of international trade. The book provides an excellent catalogue and description of current exchange practices; and in this respect the volume's usefulness has been enhanced by 100 pages of appendices including, among other things, a catalogue of "Nonsterling Bilateral Payments Agreements," and a table of "Exchange Rate Systems of Principal Countries of the World." The teacher, researcher, and graduate student reading sections or the entire volume will be amply rewarded.

University of Tennessee JOHN R. MOORE

The Theory of Fiscal Economics. By Earl R. Rolph. Berkeley, Calif.: University of California Press, 1954. Pp. xiv, 310. $4.50.

This is an excellent study because it discusses a selection of some of the most important contemporary theoretical issues in the field of public finance. To the discussion of these issues the author has made important contributions.

We find the unifying thesis of the book to be that all tax revenue devices, however much they may differ in their legal characteristics, are fundamentally similar in their reduction of private money incomes by amounts quantitatively equal to the revenue obtained by the government. Thus the author does not recognize the incidence of a tax on any person to whom a change in present

money income cannot be traced as a consequence of the tax. The "present" is defined as a period too short for incomes to be added to stocks of assets and through such stocks to affect consumption. Income in the present does not affect expenditures in the present. Taxes, viewed as present government revenue or income likewise have no effect upon either present private expenditures or present government expenditures. As indicated below, this reviewer does not fully share the enthusiasm of the author for this approach as a "simplification" of fiscal economic analysis, but his discussion does reflect the existence of a number of unsettled issues.

The tax revenues given particular attention are excise, import, income and flat-sum levies. Flat-sum levies are emphasized not because they are considered fiscally important but because they provide an expositional bench-mark of considerable utility.

Many specific findings as to tax incidence and effect are of interest. For example, the author finds that whether excises are perfectly general or partial they are paid by the owners of real resources and not by consumers as such. The author probably would not deny that since most of us are both consumers and real resource owners (that is, owners of our own labor power) such findings may make little practical impact upon the appraisal of our real situation. Although Rolph's interest is primarily on the monetary effects and only secondarily on the real effects of taxes, he clearly shows in another context that there may be no real burden imposed upon taxpayers as a consequence of imposing taxes alone.

In regard to taxes and the work-leisure choice, Rolph analyzes separately the redistributional effects and the effects resulting from the presence of positive marginal tax rates. In the case of poor countries he concludes that the redistributional income effect is dominant and may call forth more work from the wealthy while at the same time ultimately increasing through relatively better opportunities the supply of effective work coming from those at the poverty level. His tentative conclusion for the United States is that for institutional reasons people are unable to avail themselves of the advantages of the low priced leisure which is brought into being by the high marginal tax rates. Consequently the sensitivity to the price of leisure is low and the tendency to substitute leisure for work and thereby to shift taxes to others than the legal taxpayers is slight. Thus here also the income effect of taxes is found to dominate the substitution effect.

The book has much to say about the effects of taxes on investment and capital values. A most interesting footnote suggestion is that although the single tax movement is fortunately dead, its equivalent is now being resurrected under the guise of accelerated amortization. The author favorably reviews the Domar-Musgrave thesis that a proportional income tax which permits full loss offsets increases the inducements of investors to hold "risky" assets. He is aware, however, of the difficulties of the subjective frequency approach implicit therein. He is willing to admit that in explaining the behaviour of some investors' demands we can do no better than say that they have a "taste" for one type of

assets as against another. In these situations the theory of investment demand becomes the logical equivalent of our theory of consumption demand.

Finally, the author apparently felt it necessary to disavow the Keynesian type of consumption function as a prelude to the important findings scantily summarized above. This reviewer thinks that this need not have been done and that closely parallel findings could have been made within the Keynesian theoretical scheme. Rolph rejects the Keynesian consumption function for two reasons. He rejects it first because in its simultaneous determination of income and the consumption dependent thereon, it does not properly respect the principle that event A must occur before event B if it is to be the cause of event B. This first objection could of course be overcome by casting the consumption function into a dynamic form without rejecting the essential ingredient that consumption is determined by (has some stable relation to) income. He rejects it secondly, however, for a more fundamental reason—because he denies that consumption spending is determined in any significant way by income since income is a flow and a flow cannot be "spent." Only stocks can be spent. In going completely to a stock of assets determination of consumption, Rolph's separation from Keynes is a vital one. Necessarily, however, in a book of this length and orientation we have been left with unanswered questions.

Even though we may admit that the amount of assets convertible to cash constitutes the final constraint on a consumption unit's capacity to spend, it does not necessarily follow that such assets have yet been shown meaningfully to *determine* the rate of spending within those constraints. As a test for this, are we justified in assuming that the time profile of a typical family's actual or even potential asset holdings closely corresponds in any definable way to the time profile of its consumption? Or is the consumption likely to be found more closely associated with the requirements of the family unit as a biologically maturing entity? Though we may eventually take the road which Rolph has marked, we require some empirical answers to the foregoing and other questions before we can be reasonably confident that we are lessening instead of increasing our theoretical troubles.

This book is worthy of careful attention both as a work in theory and as a work in traditional public finance since it essays the difficult task of bringing the former into a more relevant relation to the latter.

University of North Carolina LOWELL D. ASHBY

The Dollar Decade: Business Ideas in the 1920's. By James Warren Prothro. Baton Rouge, La.: Louisiana State University Press, 1954. Pp. xxi, 256. $4.75.

The purpose of this book is to develop a conceptual tool which can be used in the analysis of "almost any political theory." The author examines the views of business during the 1920's on the nature of man, society, and government, for he regards the business view on government as being dependent upon its views on man and society.

Regarding the nature of man, businessmen are portrayed as having limited faith in mankind, with the mass of the population being incapable of rational or

independent thought. Since this was the nature of the masses, this group was subject to corruption, but the business-men, being of a superior type, were uncorruptible and had the duty of guiding the inferior masses. The economic environment is such that the able are elevated, and the unable are doomed to remain poor because of "lack of wit to earn, thrift to save, and knowledge to use his savings." Man's worth, then, is reflected in his financial standing.

Self-aggrandizement was the supreme form of human motivation, and furthermore, such a motive was entirely consistent with the general welfare. The inferior groups, being incapable of success, were resentful of others, and turned to "socialistic" remedies. This philosophy of business was highly materialistic, for they felt that the good life was to be found in an accumulation of economic goods. It was a Calvinistic philosophy which emphasized that work was man's most laudable activity, especially for the inferior masses, and it was from work that all other benefits were derived.

The primary social goal was the promotion of institutional stability for it was in the history of the social institutions that "right" was to be found. Business was the most important instrument of society, for it was the only successful institution, and government was to be assigned a secondary role, for it was a conspicuous failure. The various parts of the economic system were bound together by an absolute harmony of interests; at least, this was the situation in the eyes of the business leaders. Where trouble was found, it was usually the failure of a particular group (often labor) to realize that their interests were the same as those of business.

As for government, its primary function was to protect life and property, and there was no enthusiasm for any of the welfare activities of government. Minimum government and minimum taxation were the twin planks of this philosophy. Although they favored minimum taxation, it was felt that the masses should be taxed more in order to increase their sense of participation and reduce their avidity for governmental assistance. Taxes on the elite should be minimized since any tax on this group had a deleterious effect on society. The situation is reversed, however, when promotional activities of goverument are considered. Aid to the masses should be minimized because this was an inferior group and subject to corruption. Aid to the elite was harmless since it was a superior group and incorruptible. In fact, there was a positive gain in aiding business, for the bureaucrats would gain from their contact with business.

Regulation was undesirable except for labor unions which were attempting to hold up the public and thus needed to be regulated in the public interest. Regulation, in other sectors of the economy, was undesirable because (1) economic forces would suffice, (2) politicians were incompetent, (3) it was a class measure, and (4) it would violate constitutional rights.

Underlying this 1920 philosophy of business was a complete distrust of political power with a popular base; however, this was in sharp contrast to their firm belief in economic power with its elite base. The price system was looked upon as the highest form of democracy, for everyone was eligible to vote, and the economic laws were immutable and beyond the power of a demagogue to abuse.

The author sums up the business philosophy of the period as being based on the following interrelated dogmas: (1) the nature of man established the doctrine of the elite and a material standard of value; (2) the theory of society develops the preeminence of economic interests and the necessity of social stability; and (3) the theory of government points to the fears of popular control and the importance of individualism. He indicts the NAM and the Chamber because they betrayed the responsibilities of conservatism at a time where there was the "greatest opportunity to develop a broad and enduring appeal." The author closes by asking whether business will rise to the responsibilities of leadership at the present time.

The weak point is the initial assumption that the spokesmen for the National Association of Manufacturers and the United States Chamber of Commerce accurately represent the views of business. In the introductory chapter, the author recognizes that they may not, but he feels that since the two groups were the organized and vocal sector of the business community, they will suffice for his purposes. By the end of the book, however, he assumes, without qualification, that the two groups are representative of business views.

Some of the author's conclusions rest upon a rather tenuous base, for he depended rather heavily on a limited number of sources which does not give the study the desirable breadth. There are approximately 600 footnotes with most of them indicating quotations, and approximately 40 per cent represents the views of five individuals. The extreme case is Chapter 7 defining the proper role for government, and in this chapter, 13 of the 26 footnotes are taken from C. N. Fay's *Business in Politics*.[1] Mr. John E. Edgerton, President of the NAM from 1921 to 1931, is quoted extensively; in fact, he is the source of approximately 10 per cent of the quotes in the entire book. Actually, then, the views of a very few individuals are taken to represent the views of business.

Who does speak for business? The NAM the Chamber, Committee for Economic Development, Henry Ford, Paul Hoffman, or any of a multitude of others? The answer is, of course, none of them, for business has no single voice to which one can turn for the business viewpoint. In 1953 the U. S. Chamber of Commerce included among its membership 3,000 state and local chambers and trade associations, and among those members there was the widest variation in views. In some industries there are several trade associations, and no one of them is able to speak for the entire industry. The pragmatic attitude of those in business, like the rest, prohibits a single voice from representing *the* business viewpoint on any but the very broadest of issues. Labor, agriculture, and other interest groups are in the same position. Labor has a common belief in job protection, but beyond that there is a wide diversity in views. Agriculture wants a larger share of the national income, but there is no consensus on the workaday issues.

The use of the tool developed by the author is somewhat limited. If it were applied to the present period, the results would not be as clear-cut as is the case in the study under review. Today's business viewpoint could not be interpreted

[1] C. N. Fay, *Business in Politics, Suggestions for Leaders in American Business*, Cambridge, 1926.

as being synonymous with the views of the NAM and the Chamber, for *it must* include the views of a very large number of organizations and individuals. The author makes a positive methodological contribution; nevertheless, if it is to be generally applicable, it will be necessary to use a much wider base.

University of Richmond JOHN M. KUHLMAN

The Economics of Location: A Pioneer Book in the Relations Between Economic Goods and Geography. By August Lösch. Translated from the Second Revised Edition by William H. Woglom with the assistance of Wolfgang F. Stolper. New Haven, Conn.: Yale University Press, 1954. Pp. xxviii, 520. $7.50.

On the first page of the book, Lösch notes that: "OUR EXISTENCE in time is determined for us, but we are largely free to select our location." On the last page of the book, he writes: " . . . the question how the economy fits into space not only opens a new field but leads in the final analysis to a new formulation of the entire theory of economics." On page 4 of the book, Lösch claims: "The real duty of the economist is not to explain our sorry reality, but to improve it." These three quotations form, to my mind, the heart and soul of this truly outstanding contribution. They advise that the main objective of the book is to reformulate the science of economics on the basis of spatial relations, and then, to the extent that a theoretical system may be so devised in explanation of underlying economic patterns in space, reality *may be* altered to fit such true rational design of life.[1]

This book review will not pretend to outline even broadly the ways in which Lösch specified spatial problems and sought their satisfaction. Certainly, such pretension would have to be in disregard of page allotments for this review and further would be in unnecessary duplication of an excellent and detailed review by W. F. Stolper of the original German edition of this book. Under these considerations, the present writer seeks only (a) to call attention to the September 1943 issue of the *American Economic Review*, where this outstanding particularizing review by Stolper is offered, and (b) to suggest the following essential elements of this book as visualized by the present reviewer.

Lösch's approach to economic theory has three major subject-matter phases: (1) the problem of the location of economic activity, (2) the application of economic principles to a spatial framework, and (3) the further development of the theory of international trade. Permit me to explain Lösch's contribution from each of these particular standpoints.[2]

[1] And see p. 363, where Lösch states: "Comparison now has to be drawn no longer to test the theory, but to test reality! Now it must be determined whether reality is rational. . . . It is my desire to reinforce in my readers the conviction that a rational economic order is not only conceivable, but realizable."

[2] One might say that what I refer to as Lösch's phase 1 reflects the type of emphasis of E. M. Hoover and T. Palander. Phase 2 reflects, in a sense, the input-output work of Leontief and Isard. Phase 3 contains reminiscenses of Haberler and Ohlin. More importantly than just these connections in scope of subject matter is the fact that Lösch keeps in fine step with this good company, either predating or supplementing their conceptions, as the cases be.

(1) In reference to pure location theory, Lösch goes several steps further than his spiritual predecessors, von Thünen and Weber. He adds many new ways of appreciating the von Thünen system of rings, while, particularly to the Weberian system, he adds an entirely new dimension (the application of demand analysis to models of site-selection). Notwithstanding these accomplishments, the location theory side of this book is perhaps its weakest link. There is neither provided any organized system of location principles nor any systematized set of models from which the interdependence between firms can be appraised. While Lösch does include demand aspects, this inclusion is not so much from the standpoint of determining the impact of demand factors on particular site-selections as it is for the purpose of formulating a general system of spatial equilibrium. As such, Lösch did not go much further than bare mention of demand curves in space, or, otherwise expressed, problems of spatial competition in location and of price derivations in a space economy remain largely outside of his immediate interest. But this over-all omission may well be the best procedure under the objective of this book; the general subject of *plant* location (in all of its facades) includes more forces than the particular system of relations after which Lösch was in quest.

(2) It is in the offering of *a* system of general economic relations in space that Lösch makes his strongest appeal. He first sets up a series of equations which equal in count the number of unknowns. Thus, his system is determinate. But more important to Lösch than just this Walrasion type of finding is the attempt to *depict* the way in which this system would *appear* in space. For such formulation, he relies on the perspective of his already devised equilibrium conditions plus the particular equilibrium technique of Chamberlin. His obtained picture of a space economy in equilibrium, framed on the basis of a system of hexagonic market areas, is a derivation of pure brilliance. Basically, it is constructed on a small set of general assumptions which, though producing a spatial model quite remote from particular realities, yields a whole picture that conforms quite closely to general empirical data.[3] Most important to Lösch, this generic picture is one to which the real world may be adapted. In sum, Lösch seeks the whole (Gestalt) and not the specifics. This method yields, on one hand, the great advantages just noted, while, on the other hand, it carries such disadvantages as those which were cited in the discussion of his contribution to pure location theory.

(3) The third main aspect of Lösch's treatise is his further development of international trade theory. Following in the tradition of Ohlin, Lösch speaks in terms of economic regions, not political entities. One main contribution of Lösch in this regard is his very sharp conception of the economic region. Further, Lösch points out that the customary emphasis on the political unit requires a concept of an average level for each trading nation, when, in fact, prices within any country are wavelike in nature from border to border. This wave-like system of prices throughout land surfaces suggests that any one country may have dif-

[3] In the last part of his book, Lösch relates his ideas to statistical data, chiefly of American origin. With startling regularity, he points out the overall conformance of these data to his general theoretical system.

ferent prices for any one good and may well be importing and exporting the same good at the same moment of time. Most vitally, this conception stresses (1) the importance of the economic region, while (2) also tying up with that part of Lösch's equilibrium system which holds that commodities will be produced in as many locations as possible. In sum, these several concepts (land surface price waves, maximum number of locations, and economic regions) lead Lösch to the holding that international trade first produces a transfer effect at the border regions which gradually spreads over a larger area at a diminishing multiplier rate. They constitute his major innovations to the theory of international trade, which subject matter investigations, like that on plant location, must, however, be considered subsidiary to his objective of depicting a general economic pattern in space.

In brief overall summary, Lösch's real contribution lies not so much in his analysis of plant location theory, nor in his approach to international trade, but in his offering of a system of economic relations based on spatial properties. In this latter regard, he presented only a special picture of spatial patterns not an all-inclusive theoretical system which would hold true under conditions of heterogeneity in land surfaces, wants, and types of competition, no matter how such heterogeneity was first formed. Under this view, it follows that Lösch merely examined certain aspects of space economics. But, let this particular achievement not be thought to be of less than considerable importance. Lösch's *Economics of Location* is one book which will be recorded in the history of economic thought.

Rollins College MELVIN L. GREENHUT

A Concise Economic History of Britain from 1750 to Recent Times. By W. H. B. Court. New York: Cambridge University Press, 1954. Pp. viii, 368. $4.00.

The most distinguished of British economic historians, the late Sir John Clapham, began before his death in 1946 a short survey of British economic history intended for the lay public. This incomplete manuscript was published by the Cambridge University Press in 1949 under the title *A Concise Economic History of Britain from the Earliest Times to A. D. 1750.* The press subsequently invited W. H. B. Court, a former student of Clapham's and now professor of economic history in the University of Birmingham, to write a sequel which would fulfill Clapham's original intention. The present volume, nevertheless, stands as an independent work complete in itself.

The book is divided into two parts, "The Growth of an Industrial State, 1750–1837," and "The Victorian Economy and After, 1837–1939," with a lesser breaking point at 1880. Thus it avoids entirely the traditional periods of either political or economic history. However, the author does not rigidly limit himself within these dates, frequently darting ahead or backtracking a half century or more; and in other respects the novel organization appears to add (or subtract) but little from other interpretations of the era. The true originality of the volume lies with the distribution of emphasis on periods and topics and in the interpretation of particular developments.

Court does not attempt to carry the story beyond 1939, and even his treatment

of the interwar period is slight in comparison with the number of pages devoted to the nineteenth century. More emphasis than has been customary in recent writings is given to descriptions of social conditions, and to interpretations of their causes and consequences. The treatment of monetary and financial institutions of the late eighteenth and early nineteenth centuries is unusually good; and agriculture, commerce, and commercial policy receive their due, although somewhat less attention than usual is devoted to technology and industrial organization. Except for the perhaps undue weight assigned to social history, and the slight treatment accorded the twentieth century, the balance achieved is remarkably good.

In his interpretation of the immediate social consequences of the rapid industrialization which took place in the early decades of the nineteenth century Court follows a middle course between the older writers, who saw the process as one which impoverished and degraded the masses, and the more recent group of "revisionists," who regard it as productive of immediate and almost universal benefits. (See, *e.g.*, *Capitalism and the Historians*, edited by F. A. Hayek [Chicago, 1954], reviewed in THIS JOURNAL, XXI [July, 1954], 96–98.) The handloom weavers and others whose skills were undermined by the new machinery were not the only sufferers. The "swift transformation of social and industrial relations" together with the great price inflation of the Revolutionary and Napoleonic Wars, which redistributed income in favor of landlords and businessmen at the expense of the wage earners, placed the masses under new hardships and produced considerable social tension (pp. 127, 145). Even for those workers in the new industries in which wage rates were higher than under the old conditions "instability and the insecurity of incomes" resulting from the new pattern of economic fluctuations were considered by many to be a greater evil (p. 89).

The description of the social milieu of the late Victorian period, which gave rise to mass unionism, socialism, and the birth of the Labour Party, is well done. The parallel which is suggested between the technological, economic, social, and political changes of the period 1815–1837 and that of 1919–1939 is interesting, but is not carried far enough to be conclusively demonstrated.

The jacket etching, "Tapping the Blast Furnace" in the vicinity of Birmingham about the year 1878, is as appropriate for this volume as the "View of Fields in the Vicinity of Cambridge" in the early eighteenth century is for the earlier volume by Clapham. The design and format of the book are up to the usual standards of the Cambridge University Press, but a number of typographical errors have slipped past the proofreaders: "1951" and "1930's" appear for "1851" and "1830's" respectively on pp. 170 and 238; and "yard" for "yarn" on p. 305. The date given for the founding of the East India Company (1500) on p. 84 is undoubtedly a misprint, but the American historian Ralph Hidy is consistently referred to on pp. 80 and 143 and in the brief bibliography as "R. Hidey." The date of the death of Karl Marx is given as 1888 (instead of 1883) on p. 272, and it is misleading to refer to 1851 as the "turn of the century" (p. 161).

Apart from these trivial defects, this volume will long serve as a competent, even distinguished, survey of its subject for lay reader and scholar alike.

University of Wisconsin RONDO E. CAMERON

The Theory of Collective Bargaining. By W. G. Hutt. (New American edition with a Preface by Ludwig Von Mises.) Glencoe, Ill.: The Free Press, 1954. Pp. 150. $3.00.

The growing power of labor unions in the United States since the New Deal has led economists to give serious consideration to the limits and uncertainties that surround any extensive program for bettering the economic conditions of labor by increasing wages through the process of collective bargaining. For a considerable period after the wages fund doctrine was discredited as an argument against unions, many economists came to believe that there was nothing wrong with the theory that wages could be raised through collective bargaining. They argued that the wage bargain was indeterminate and that the only way by which workers could get their fair share of the product was to organize and thereby increase their bargaining power to an equality with that of wealthy employers. This theory is still held by some economists, many politicians and most trade-union leaders. It played an important part in the drafting of the National Labor Relations Act.

Professor Hutt strongly opposes the idea that unions can improve the living standards of workers in general through the process of collective bargaining. In presenting his arguments against collective bargaining he first gives a critical analysis of the arguments advanced by economists from Adam Smith down and by union spokesmen in support of the thesis that the unions through the process of collective bargaining can raise wages above the market rate without harm to anyone but the "exploiters."

It is the contention of the author that when unions become so powerful that they can exert monopoly powers in dealing with the employers, the employers will in turn organize into strong employer's associations. This leads to a condition of bilateral monopoly which will in the end result in the exploitation of the consumer. This is true says Professor Hutt because, "No factor of production can maintain the cooperation of another factor by offering it or leaving it an amount of the product less than the value of its net product elsewhere. The extent to which demand for the product falls off as its price is raised determines the quantity of one factor that will be driven away by another factor getting a larger share. Hence, we can say that monopoly-gains by any factor are ultimately obtained by exploiting the consumer, although incidental losses are usually thrown upon other cooperant factors."

Professor Hutt's essay is characterized by keen analysis and convincing argument. He does not offer, however, any solution for the problem which he analyzes in such a convincing manner. He does state in his concluding remarks that, "So long as one of the factors making up total labor costs is allowed to vary in harmony with economic change the value mechanism in society can continue to work. One cost factor at least must be variable, and it is desirable that it should be the one which is most sensitive to change and therefore the most reliable index to guide human effort. That condition is satisfied by the rate of wages."

University of Virginia George T. Starnes

PERSONNEL NOTES

Clark Lee Allen, head of the Department of Economics at A. and M. College of Texas, was elected an editor of the *Southern Economic Journal* at the annual meeting of the Southern Economic Association last November.

Edward H. Anderson, professor of management and director of the Graduate Division in the School of Commerce and Business Administration, University of Alabama, was elected first vice president of the Southern Economic Association for 1954–1955.

Earl L. Bailey has been appointed research associate in the Bureau of Business Research and assistant professor of business statistics at the University of Alabama.

William B. Barrett has been appointed instructor in economics and accounting at Arkansas A. and M. College.

Frank M. Bass has been appointed assistant professor of marketing at the College of Business Administration, University of Texas.

Winston Beard is teaching business and economics at Ouachita Baptist College.

John Brewer has been appointed assistant professor of business law at the University of Alabama.

Nellis Briscoe has been appointed instructor of agricultural economics at Oklahoma A. and M. College.

Paul M. Carrick has been appointed assistant professor of marketing at the College of Business Administration, University of Texas.

William C. Clement is a part-time instructor in economics and accounting at Arkansas A. and M. College.

H. W. Cordell, formerly of Ohio State University, has been appointed lecturer in marketing for the Spring Semester in the College of Business Administration, University of Florida.

Charles M. Crawford resigned as assistant professor of marketing, University of Florida, to accept a position as project director in the Market Research Department of Meade Johnson Company.

G. William Crist resigned his position as professor of insurance, University of Florida, effective February 1, 1955.

Lillian Cundliff, formerly at the University of Mississippi, is teaching accounting and general business at Southern State College (Arkansas).

John A. Davis is on leave of absence from Memphis State College to pursue his doctorate in economics at the University of Alabama.

Lawrence Dinsmore has been appointed instructor in accounting at Arkansas State College.

James H. Edmondson, of Ouachita Baptist College, is on leave studying at Indiana University.

C. William Emory has resigned his position as associate professor of marketing, University of Florida, to accept a position at Washington University.

R. F. Ericson, head of the Department of Economics, Stetson University, has been appointed director of Stetson's Executive Development Program.

Rendig Fels is on leave from Vanderbilt University during the spring quarter as visiting professor of economics at Stanford University.

J. D. Fenn, formerly chairman of the Department of Business Administration at George Pepperdine College, is professor of business administration at Harding College.

Charles C. Gersna, formerly of the University of Michigan, has been appointed interim instructor in marketing, University of Florida.

John C. Gibson has resigned at Arkansas Polytechnic College to become head of the Department of Business Administration at Delta State College in Mississippi.

Mrs. E. K. Gillespie has been appointed associate professor of business education at Ouachita Baptist College.

Paul V. Grambsch, associate professor of management, was named associate dean of the School of Business Administration, Tulane University.

Katherine Green is teaching business education at Henderson State Teachers College (Arkansas).

Donald M. Halley, on leave during the academic year of 1953–54 to serve as visiting professor and advisor to the University of the Philippines, has returned to his post as professor of finance and administration at Tulane University.

Langston T. Hawley, professor of management in the School of Commerce and Business Administration, University of Alabama, has been appointed research coordinator of the Alabama Business Research Council, sponsored jointly by the Committee for Economic Development and the University of Alabama School of Commerce and Business Administration. He also was re-elected an editor of the *Southern Economic Journal* at the last annual meeting of the Southern Economic Association.

B. T. Hendson is head of the Department of Business and Economics at the Arkansas Agricultural,Mechanical, and Normal College.

Joseph S. Hopson, formerly at the University of Georgia, has been appointed head of the Department of Accounting at Arkansas Polytechnic College.

Virgil A. James, formerly of the University of Houston, has joined the staff of the University of Texas as associate professor of management in the College of Business Administration and director of Executive Development in the Division of Extension.

George C. Judge has accepted an appointment as associate professor of agricultural economics at Oklahoma A. and M. College.

John D. Kirby has been retained as associate professor of economics at Memphis State College.

Hillquit Lynch, of Henderson State Teachers College (Arkansas), is on leave doing graduate work at the University of Texas.

Henry B. Moore, director of the Bureau of Business Research, has taken a year's leave of absence at the University of Alabama to serve on the staff of the United States Bureau of Labor Statistics and the Foreign Operations Administration which is handling the program of technical assistance to European industry.

Newell S. Moore has been promoted to assistant professor of economics at Arkansas A. and M. College.

Kermit C. Moss resigned his teaching position at Arkansas A. and M. College to join the staff of the Internal Revenue Bureau in Houston, Texas.

John H. Mudie has been appointed instructor in economics at Texas A. and M. College.

Armand L. Perrault, Jr., is a teaching assistant in accounting at Tulane University.

Clarence E. Philbrook, associate professor of economics, University of North Carolina, has been reappointed an editor of the *Southern Economic Journal*.

J. Eugene Pierce has resigned his position as assistant professor in insurance, University of Florida, to accept a position as associate professor at Southern Methodist University.

James S. Plaxico has accepted an appointment as professor of agricultural economics at Oklahoma A. and M. College.

Merrill J. Roberts has been appointed professor of economics and transportation at the University of Florida.

Jack E. Robertson is a teaching assistant in economics at Tulane University.

D. D. Saunders, formerly at Bacone College (Oklahoma), is teaching economics at Southern State College (Arkansas).

Howard G. Schaller has been promoted to associate professor of economics at Tulane University.

Steven J. Shaw has joined the faculty of Tulane University as assistant professor of marketing.

Melvin Simms has been appointed instructor in commerce education at Arkansas State College.

Howard R. Smith, professor of economics at the University of Georgia, was re-elected secretary-treasurer of the Southern Economic Association for 1954-1955.

Spencer M. Smith, professor of economics at the University of Maryland, has been appointed Maryland correspondent for the *Southern Economic Journal*.

James M. Stepp, professor of economics at Clemson Agricultural College, was elected second vice president of the Southern Economic Association for 1954-1955.

Ernst W. Swanson, professor of economics at Emory University, was elected president of the Southern Economic Association for 1954-1955.

Eugene L. Swearingen has been appointed director of the Workshop of Economic Education for 1955 at Oklahoma A. and M. College.

Ralph B. Thompson, associate professor of marketing in the College of Business Administration, University of Texas, is on leave during 1954-55. He is with the Southwest Research Institute, San Antonio, Texas, as editor of the Southwest Resources Handbook.

Ernest W. Walker has been appointed associate professor of management in the College of Business Administration, University of Texas.

Howard Whitney has resigned at Oklahoma A. and M. College to become assistant professor of agricultural economics at Texas A. and M. College.

William L. Wilbur is serving as instructor in economics at Memphis State College.

B. S. Williams, of the Arkansas Agricultural, Mechanical, and Normal College, is on leave studying at the University of Chicago.

J. Earl Williams has been placed in charge of courses in economics at Austin Peay State College.

Orvil Yeager has been appointed head of the Department of Economics at Ouachita Baptist College.

H. B. Young, of the Arkansas Agricultural, Mechanical, and Normal College, is on leave studying at Harvard University.

* * *

The following names have been added to the membership of the Southern Economic Association:

William H. Alexander, Department of Agricultural Economics, Louisiana State University, Baton Rouge, La.

John E. Altazan, College of Business Administration, Loyola University, New Orleans, La.

Vance Q. Alvis, Emory and Henry College, Emory, Va.

Howard Floyd Balsley, School of Business Administration and Economics, Louisiana Polytechnic Institute, Rouston, La.

Carlisle W. Baskin, Randolph-Macon College, Ashland, Va.

Lehman M. Bauknight, Department of Agricultural Economics, Clemson College, Clemson, S. C.

James H. Blackman, Department of Economics, University of South Carolina, Columbia, S. C.

R. W. Bradbury, College of Business Administration, University of Florida, Gainesville, Fla.

Richard W. Bryan, Louisiana Polytechnic Institute, Rouston, La.

W. M. Caskey, Mississippi College, Clinton, Miss.

Alfred F. Chalk, Texas A. and M. College, College Station, Tex.

George P. Champion, Department of Business Administration, University of Mississippi, University, Miss.

Donald M. Cruse, Louisiana State University, Baton Rouge, La.

Albert H. Dehner, College of Business Administration, University of Florida, Gainsville, Fla.

Arthur T. Dietz, School of Business Administration, Emory University, Ga.

James H. Dornburg, Military Operations Research Department, Lockheed Aircraft Corporation, Marietta, Ga.

C. E. Ferguson, School of Business Administration, University of North Carolina, Chapel Hill, N. C.

Edward C. Furlong, Stetson University, DeLand, Fla.

William P. Glade, University of Texas, Austin, Tex.

Homer H. Hamner, Department of Economics, Baylor University, Waco, Tex.

William H. Harris, Jr., College of Business Administration, University of Georgia, Athens, Ga.

Harold J. Heck, School of Business Administration, Tulane University, New Orleans, La.

B. B. Holder, Washington and Lee University, Lexington, Va.

Everette N. Hong, College of William and Mary, Norfolk, Va.

George E. Hunsberger, University of Arkansas, Fayetteville, Ark.

John L. Johnson, Bureau of Business Research, University of Kentucky, Lexington, Ky.

Richard B. Johnson, Southern Methodist University, Dallas, Tex.

Jerry M. Law, Department of Agricultural Economics, Louisiana State University, Baton Rouge, La.

Raymond V. Lesikar, College of Commerce, Louisiana State University, Baton Rouge, La.

James W. McKie, Department of Economics, Vanderbilt University, Nashville, Tenn.

Laurence F. Mansfield, Department of Economics, University of Tennessee, Knoxville, Tenn.

Murry J. Martin, David Lipscomb College, Nashville, Tenn.

Charles R. Minton, University of Kentucky, Lexington, Ky.

Harry A. Mitchell, School of Business Administration, Tulane University, New Orleans, La.

H. H. Mitchell, Alabama Polytechnic Institute, Auburn, Ala.

A. Burke Parsons, Department of Economics, University of Texas, Austin, Tex.

Florence Peterson, Rollins College, Winter Park, Fla.

Stanley W. Preston, Louisiana State University, Baton Rouge, La.

W. C. Ribble, Hardin-Simmons University, Abilene, Tex.

N. H. Ringstrom, College of Business Administration, Loyola University, New Orleans, La.

Raymond W. Ritland, School of Business Administration, Tulane University, New Orleans, La.

W. D. Robbins, Rollins College, Winter Park, Fla.

Dwight D. Saunders, Southern State College, Magnolia, Ark.

William P. Snavely, Department of Economics, University of Connecticut, Storrs, Conn.

Pedro C. M. Teichert, College of Commerce, Louisiana State University, Baton Rouge, La.

Thomas D. Temple, School of Business Administration, University of South Carolina, Columbia, S. C.

Warren C. Waterhouse, Mississippi State College, State College, Miss.

R. E. Westmeyer, College of Business Administration, University of Arkansas, Fayetteville, Ark.

Henry B. Wilson, Department of Economics, University of Mississippi, University, Miss.

Howard W. Wissner, Tulane University, New Orleans, La.

NOTES

THE SOUTHERN ECONOMIC JOURNAL

RECEIPTS AND EXPENDITURES FOR THE FISCAL YEAR ENDING OCTOBER 31, 1954

Cash Balance, November 1, 1953			$ 3,043.33
RECEIPTS			
University of North Carolina			
Balance Annual Grant for 1953–1954	$1,000.00		
Advance on Annual Grant for 1954–1955	$1,000.00		
Total		$2,000.00	
Southern Economic Association			
Annual Membership dues	$2,074.00		
Institutional Membership dues	1,300.00		
Contributing Membership dues	110.00		
Student Membership dues	28.50		
Total		$3,512.50	
Office of Managing Editor			
Subscriptions to Journal	$2,477.43		
Miscellaneous Sales of Journal	160.69		
Advertising	1,190.47		
Total		$3,828.59	
Total Income			$ 9,341.09
Total Cash Balance and Income			$12,384.42
EXPENDITURES			
Printing the Journal	$4,653.61		
General Expense	67.28		
Other Printing	43.85		
Postage	243.06		
Telephone, Telegraph and Supplies	204.20		
Salary	2,363.15		
Purchase of Back Copies of Journal	9.00		
Travel	93.30		
Refunds	9.00		
Total Expense		$7,686.45	
Balance, October 31, 1954		4,697.97	
			$12,384.42
Balance Represents			
UNC Advance on 1954–1955 Annual Grant	$1,000.00		
Actual Balance	3,697.97		
		$4,697.97	

G. T. SCHWENNING
Managing Editor

SOUTHERN ECONOMIC ASSOCIATION

RECEIPTS AND EXPENDITURES

Cash on Hand, November 1, 1953			$ 673.24
Receipts, Fiscal Year Ending October 31, 1954:			
Annual Memberships		$2,604.00	
Student Memberships		38.00	
Institutional Memberships		1,300.00	
Contributing Memberships		110.00	
Savings and Loan Dividends		16.73	
Miscellaneous		2.00	4,070.73
			4,743.97
Expenditures, Fiscal Year Ending October 31, 1954:			
Association Expenses:			
Postage	$ 70.65		
Supplies	37.75		
Printing	111.08		
Travel	20.93		
Miscellaneous	134.89	375.30	
Investment Account:			
Dividend Deposited		16.73	
The Southern Economic Journal		3,512.50	3,904.53
Cash on Hand, October 31, 1954			839.44
			4,743.97

INVESTMENT ACCOUNT

Balance, November 1, 1953	553.52
Dividend Deposited	16.73
Balance, October 31, 1954	570.25

FUND BALANCES

Checking Account, National Bank of Athens, Athens, Georgia	839.44
Investment Account, Athens Federal Savings and Loan Association, Athens, Georgia	570.25
Total Funds, October 31, 1954	1,409.69

Howard R. Smith
Treasurer

COOPERATIVE GRADUATE SUMMER SESSIONS IN STATISTICS

The University of Florida, North Carolina State College, Virginia Polytechnic Institute and the Southern Regional Education Board are jointly sponsoring a series of cooperative summer sessions in statistics.

The first of these cooperative graduate summer sessions was held during the summer of 1954 at Virginia Polytechnic Institute. At this session there were 89

students from 26 states and the District of Columbia and from India, Finland, Canada, Australia, China, Hawaii and the Philippines. The following courses were offered: Engineering Statistics, Statistical Methods I, Statistical Theory I (Probability and Inference), Biostatistics, Quantitative Genetics, Rank Order Statistics, Multivariate Analysis, and Seminar on Recent Advances in Statistics. Classes ranged in size from 9 to 34, with an average of 20.

The second session will be held at the University of Florida from June 20 to July 29, 1955. A session is scheduled to be held at North Carolina State College in 1956, and another at Virginia Polytechnic Institute in 1957.

The summer sessions are designed to carry out a recommendation of the Southern Regional Education Board's Advisory Commission on Statistics, on which the three institutions initiating the program are represented. The sessions will be of particular interest to (1) research and professional workers who want intensive instruction in basic statistical concepts and who wish to learn modern statistical methodology; (2) teachers of elementary statistical courses who want some formal training in modern statistics; (3) prospective candidates for graduate degrees in statistics; (4) graduate students in other fields who desire supporting work in statistics; and (5) professional statisticians who wish to keep informed of advanced specialized theory and methods.

Each of the summer sessions will last six weeks and each course will carry approximately three semester hours of graduate credit. The program may be entered at any session, and consecutive courses will follow in successive summers. The summer work in statistics may be applied as residence credit at any one of the cooperating institutions, as well as certain other institutions, in partial fulfillment of the requirements for a master's degree. The catalog requirements for the degree must be met at the degree-granting institutions. Each doctoral candidate should consult with the institution from which he desires to obtain the degree regarding the applicability of the summer courses in statistics.

The faculty for the 1955 session at the University of Florida will include: Professor R. L. Anderson, North Carolina State College; Professor D. B. Duncan, University of Florida; Professor Boyd Harshbarger, Virginia Polytechnic Institute; Professor Carl E. Marshall, Oklahoma A. and M. College: Professor Herbert A. Meyer, University of Florida; Professor George E. Nicholson, Jr., University of North Carolina; Professor Phillip J. Rulon, Harvard University; Professor Walter L. Smith, University of North Carolina; and Professor Dudley E. South, University of Florida.

Courses to be offered this summer are: Statistical Methods I, Statistical Methods II (Design of Experiments), Statistical Theory I, Statistical Theory II (Inference and Least Squares), Advanced Analysis I, Theory of Sampling, Theory of Statistical Inference, Mathematics for Statistics, Statistical Research in Education and Psychology and Seminar on Recent Advances in Statistics.

The total tuition fee will be $35 for the six-weeks term. The holder of a doctorate degree, upon acceptance, may register without the payment of any tuition fee. Living and other expenses at the University are reasonable. The University

is in Gainesville, located in the rolling hills of North Central Florida, midway between the cooling breezes of the Gulf of Mexico and the Atlantic Ocean.

Inquiries should be addressed to:

Professor Herbert A. Meyer
Statistical Laboratory
University of Florida
Gainesville, Florida

ANNOUNCEMENTS

The twenty-fifth annual conference of the Southern Economic Association will be held on November 11 and 12, 1955 at the Biltmore Hotel, Atlanta, Georgia.

President Ernst W. Swanson has appointed the Nominating Committee for the 1956 officers of the Southern Economic Association. It consists of Frank T. de Vyver, Duke University, Chairman; William H. Nicholls, Vanderbilt; and James W. Sweeny, Georgia Institute of Technology. Members are invited to suggest names to this committee.

Howard R. Smith
Secretary

BOOKS RECEIVED

Soviet Industrial Production, 1928–1951. By Donald R. Hodgman. Cambridge: Harvard University Press, 1954. Pp. xix, 241. $5.00.

Human Relations in Small Industry. By John Perry. New York: McGraw-Hill Book Co., 1954. Pp. xi, 313. $5.50.

Hiring Practices and Labor Competition. By Richard A. Lester. Princeton, N. J.: Industrial Relations Section, Department of Economics and Sociology, Princeton University, 1954. Pp. 108. Paper, $2.50.

Centralization and Decentralization in Industrial Relations. By Helen Baker and Robert R. France. Princeton, N. J.: Industrial Relations Section, Department of Economics and Sociology, Princeton University, 1954. Pp. 218. $4.00.

Hugh Roy Cullen: A Story of American Opportunity. By Ed Kilman and Theon Wright. New York: Prentice-Hall, 1954. Pp. viii, 376. $4.00.

A Foreign Economic Policy for the United States. By Clarence B. Randall. Chicago: University of Chicago Press, 1954. Pp. vii, 83. $1.95.

Financing the Instalment Purchases of the American Family: The Major Function of the Sales Finance Company. By Clyde William Phelps. Baltimore, Md., Commercial Credit Company, 1954. Pp. vii, 105.

Research on Labor Mobility: An Appraisal of Research Findings in the United States. By Herbert S. Parnes. New York: Social Science Research Council, 1954. Pp. xi, 205. Paper, $1.75.

Montgomery's Federal Taxes. 35th ed. Edited by Philip Bardes and others. New York: Ronald Press Co., 1954. Pp. xii, G.52. $15.00.

Retail Trading in Britain, 1850–1950: A Study of Trends in Retailing with Special Reference to the Development of Co-operative, Multiple Shop and Department Store Methods of Trading. By James B. Jeffreys. New York: Cambridge University Press, 1954. Pp. xii, 497. $9.50.

Money and Credit: A Study Dealing With the Hypostasis of a New Theory of Money. Vol. I. By Marinos Evangehlou Constantacatos. Athens, Greece: Hestia, 1954. Pp. xviii, 145.

America's Foreign Trade Policy and the Gatt. By Raymond Vernon. Princeton: International Finance Section, Department of Economics and Sociology, Princeton University, 1954. Pp. 25.

Private Investments Abroad. By Charles R. Carroll. Washington, D. C.: American Enterprise Association, 1954. Pp. 83. Paper, $1.00.

Constructive Liberalism: The Role of the State in Economic Development in Georgia to 1860. By Milton Sydney Heath. Cambridge: Harvard University Press, 1954. Pp. xiv, 448. $7.50.

National Income: A Supplement to the Survey of Current Business. Prepared by the National Income Division, U. S. Department of Commerce, Office of Business Economics. Washington, D. C.: U. S. Government Printing Office, 1954. Pp. v, 249. Paper, $1.50.

Labor-Management Relations in Illini City. Vol. I: The Case Studies. By W.

Ellison Chalmers and others. Champaign: Institute of Labor and Industrial Relations, University of Illinois, 1953. Pp. xlii, 809. $10.00.

Labor-Management Relations in Illini City. Vol. II: Explorations in Comparative Analysis. By W. Ellison Chalmers and others. Champaign: Institute of Labor and Industrial Relations, University of Illinois, 1954. Pp. x, 662. $7.50.

El pensamiento social y economico de Esteban Echeverria. By Oreste Popescu. Buenos Aires: Editorial Americana, 1954. Pp. 259.

Papers and Proceedings of the Conference on Agricultural Taxation and Economic Development. Edited by Haskell P. Wald. Cambridge: International Program in Taxation, Law School of Harvard University, 1954. Pp. xiv, 439. $4.50.

The University Teaching of Social Sciences: Economics. Based on reports by C. W. Guillebaud and others. New York: Columbia University Press, 1954. Pp. 300. $3.00.

The Economics of Location: A Pioneer Book in the Relations Between Economic Goods and Geography. By August Lösch. Translated from the Second Revised Edition by William H. Woglom with the assistance of Wolfgang F. Stolper. New Haven: Yale University Press, 1954. Pp. xxviii, 520. $7.40.

Value, Capital and Rent. By Knut Wicksell. With a Foreword by G. L. S. Shackle. Translated by S. H. Frowein. New York: Rinehart & Co., 1954. Pp. 180. $3.50.

Contemporary Social Issues. By Raymond L. Lee and others. New York: Thomas Y. Crowell Co., 1955. Pp. xv, 864. $3.95.

The Dollar Decade: Business Ideas in the 1920's. By James Warren Prothro. Baton Rouge, La.: Louisiana State University Press, 1954. Pp. xxi, 256. $4.75.

The Economic Theory of Agricultural Production. By Lauri O. af Heurlin. Helsinki, Finland: Suomalaisen Kirjallisuuden Seuran Kirjapainon Oy, 1954. Pp. 128. 750 mk.

The Economic Development of Japan: Growth and Structural Change, 1868–1938. By William W. Lockwood. Princeton: Princeton University Press, 1954. Pp. xv, 603. $10.00.

Employment Expansion and Population Growth: The California Experience, 1900–1950. By Margaret S. Gordon. Berkeley: University of California Press, 1954. Pp. xii, 192. $3.50.

The System or Theory of the Trade of the World by Isaac Gervaise. By John M. Letiche. With a Foreword by Jacob Viner. Baltimore: The Johns Hopkins Press, 1954. Pp. xiv, 24. Paper, $1.50.

Personnel Case Studies. By Florence Peterson. New York: Harper & Brothers, 1955. Pp. xiv, 345. $3.00

Immigration and the Foreign Born. By Simon Kuznets and Ernest Rubin. New York: National Bureau of Economic Research, 1954. Pp. xii, 107. Paper, $1.50.

British Post-War Migration. By Julius Isaac. New York: Cambridge University Press, 1954. Pp. xix, 310. $6.00.

Evolution of Futures Trading. By Harold S. Irwin. Madison, Wis.: Mimir Publishers, 1954. Pp. xii, 95. $3.00.

Inflation and Capital. By F. V. Meyer. Cambridge, England: Bowes & Bowes, 1954. Pp. 75. 12s. 6d. net.

The Structure and Government of Labor Unions. By Philip Taft. Cambridge: Harvard University Press, 1954. Pp. xix, 312. $6.00.

National Economic Planning by Collective Bargaining: The Formation of Austrian Wage, Price, and Tax Policy After World War II. By Murray Edelman. Urbana: University of Illinois, 1954. Pp. 78. Paper, $1.50.

Essays in Economic History. By E. M. Carus-Wilson. New York: St. Martin's Press, 1954. Pp. viii, 438. $10.00.

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